A.4 Closure/ Post-Closure

P4350982 94 File

State of Illinois
ENVIRONMENTAL PROTECTION AGENCY

Mary A. Gade, Director
2200 Churchill Road, Springfield, IL 62794-9276
217/524-3300

October 21, 1993

Jeffrey D. McDermott, P.E.
Union Pacific Railroad Company
Room 930
1416 Dodge Street
Omaha, Nebraska 68179-0930

Re: 1630355007 -- St. Clair County
Union Pacific Railroad Company
ILD984774851
Log No. C-700-M-1
Received: April 13, 1993
RCRA Closure

Dear Mr. McDermott:

The closure plan modification request which requested modifications to Conditions 3 and 5 of the June 10, 1993 approval letter submitted by Union Pacific Railroad Company has been reviewed by this Agency. Your partial closure plan to close the one (1) hazardous waste container (S01) storage area (referred to as the Present Drum Storage Facility at the above-referenced facility is hereby approved subject to the following conditions and modifications:

1. When closure is complete the owner or operator must submit to the Agency certification both by the owner or operator and by an independent registered professional engineer that the facility has been closed in accordance with the specifications in the approved closure plan. This certification must be received at this Agency within sixty (60) days after closure. Union Pacific Railroad must notify the Agency in writing at least thirty (30) days prior to initiating closure activities.

   The attached closure certification form must be used. Signatures must meet the requirements of 35 Ill. Adm. Code Section 702.126. The independent engineer should be present at all critical, major points (activities) during the closure. These might include soil sampling, soil removal, backfilling, final cover placement, etc. The frequency of inspections by the independent engineer must be sufficient to determine the adequacy of each critical activity. Financial assurance must be maintained for the units approved for closure herein until the Agency approves the facility's closure certification.

   The Illinois Professional Engineering Act (Ill. Rev. Stat., Ch. 111, par. 5101 et. seq.) requires that any person who practices professional engineering in the State of Illinois or implies that he (she) is a professional engineer must be registered under the Illinois Professional Engineering Act (par. 5101, Sec. 1). Therefore, any certification or engineering services which are performed for a closure plan in the State of Illinois must be done by an Illinois P.E.

Plans and specifications, designs, drawings, reports, and other documents rendered as professional engineering services, and revisions of the above must be sealed and signed by a professional engineer in accordance with par. 5119, sec. 13.1 of the Illinois Professional Engineering Act.

As part of the closure certification, to document the closure activities at your facility, please submit a Closure Documentation Report which includes:

a. The volume of waste, waste residue and contaminated soil (if any) removed. The term waste includes wastes resulting from decontamination activities.

b. Scaled drawings showing the horizontal and vertical boundaries of the extent of any soil removal effort.

c. A description of the method of waste handling and transport.

d. The waste manifest numbers.

e. Copies of the waste manifests.

f. Information documenting the results of all sampling/analysis efforts. The goal of presenting this information should be to describe, in a logical manner, the activities and results associated with the sampling/analysis effort. At a minimum, this information must include:

   1. identification of the reason for the sampling/analysis effort and the goals of the effort;

   2. a summary in tabular form of all analytical data, including all quality assurance/quality control data;

   3. a scaled drawing showing the horizontal location from which all soil samples were collected;

   4. identification of the depth and vertical interval from which each sample was collected;

   5. a description of the soil sampling procedures, sample preservation procedures and chain of custody procedures;

   6. identification of the test method used and detection limits achieved, including sample preparation, sample dilution (if necessary) and analytical inferences;

   7. copies of the final laboratory report sheets, including final sheets reporting all quality assurance/quality assurance dates;

8. visual classification of each soil sample in accordance with ASTM D-2488;

9. a summary of all procedures used for quality assurance/quality control, including the results of these procedures; and

10. a discussion of the data, as it relates to the overall goal of the sampling/analysis effort.

g. A chronological summary of closure activities and the cost involved.

h. Color photo documentation of closure. Document conditions before, during and after closure.

The original and two (2) copies of all certifications, logs, or reports which are required to be submitted to the Agency by the facility should be mailed to the following address:

Illinois Environmental Protection Agency
Bureau of Land -- #33
Permit Section
2200 Churchill Road
Post Office Box 19276
Springfield, Illinois 62794-9276

2. If the Agency determines that implementation of this closure plan fails to satisfy the requirements of 35 Ill. Adm. Code Section 725.211, the Agency reserves the right to amend the closure plan. Revisions of closure plans are subject to the appeal provisions of Section 40 of the Illinois Environmental Protection Act.

3. If contamination is detected, the Agency must be notified in writing within fifteen (15) days of receipt from the laboratory by the facility. A revised closure plan addressing remediation of the contamination detected must be submitted within timeframes established by the Agency.

4. Under the provisions of 29 CFR 1910 (51 FR 15,654, December 19, 1986), cleanup operations must meet the applicable requirements of OSHA's Hazardous Waste Operations and Emergency Response standard. These requirements include hazard communication, medical surveillance, health and safety programs, air monitoring, decontamination and training. General site workers engaged in activities that expose or potentially expose them to hazardous substances must receive a minimum of 40 hours of safety and health training off site plus a minimum of three days of actual field experience under the direct supervision of a trained experienced supervisor. Managers and supervisors at the cleanup site must have at least an additional eight hours of specialized training on managing hazardous waste operations.

5. The concrete surface at container storage areas shall be visually inspected, photographed and any residue adhering to the surfaces must be removed by scraping and/or brushing. Following this, the concrete surface must be steam cleaned and triple rinsed. Decontamination of these surfaces will be considered complete after they are triple rinsed. All wash and rinse water shall be collected.

   After cleaning the concrete surface, an independent registered professional engineer shall inspect the integrity of the concrete surfaces as it relates to the ability of these surfaces to contain liquid. This surface shall be inspected for cracks which penetrate through the concrete. In addition, all construction joints must be inspected to ensure they are watertight. This inspection should be carried out in accordance with standards and recommendations of professional/technical entities such as the American Concrete Institute, the Portland Cement Association, the American Society for Testing and Materials, the American Society of Civil Engineers, etc. as they relate to the ability of concrete surfaces to contain liquids. The results of this inspection shall be: (1) documented in the form of a report, and (2) certified by an independent Illinois registered professional engineer in accordance with 35 IAC 702.106. A copy of this report must be submitted along with the closure documentation report required by Condition 1 above. The report must include:

   a. The results if the inspection;

   b. Scaled drawings showing the location of all cracks and construction joints observed during the inspection;

   c. Conclusions reached regarding the potential for hazardous wastes and/or hazardous constituents to migrate through any cracks or construction joints observed in the areas of concern;

   d. Justification for the conclusions reached (e.g., information must be provided which indicates that any construction joints in the area of concern are indeed watertight); and

   e. Photographs to support the conclusions reached.

6. If clean closure cannot be achieved pursuant to 35 IAC 725.211 and 725.214, then a modified closure plan and a post-closure plan prepared pursuant to 35 IAC Section 725, Subpart G must be submitted to the Agency for review and approval within 60 days of such a determination.

7. Please be advised that the requirements of the Responsible Property Transfer Act (Public Act 85-1228) may apply to your facility due to the management of RCRA hazardous waste. In addition, please be advised that if you store or treat on-site generated hazardous waste in containers or tanks pursuant to 35 IAC 722.134, those units are subject to the closure requirements identified in 35 IAC 722.134(a)(1).

8. All hazardous wastes that result from this project are subject to annual reporting as required in 35 IAC 722.141 and shall be reported to the Agency by March 1 of the following year for wastes treated and left on-site or shipped off-site for storage, treatment and/or disposal during any calendar year. Additional information and appropriate report forms may be obtained from the Agency by contacting:

    Facility Reporting Unit
    Bureau of Land
    Illinois Environmental Protection Agency
    2200 Churchill Road
    P.O. Box 19276
    Springfield, Illinois 62794-9276

Should you have any questions regarding this matter, please contact William T. Sinnott II at 217/524-3300.

Very truly yours,

Lawrence W. Eastep, P.E., Manager
Permit Section
Division of Land Pollution Control
Bureau of Land

LWE:WTS:sf/sp/359Y,1-5
WTSII
Attachment: Closure Certification Statement

cc: USEPA, Region V -- George Hamper

bcc: Bureau File
Collinsville Region
Jim Moore
Bill Sinnott

ATTACHMENT

This statement is to be completed by both the responsible officer and by the registered professional engineer upon completion of closure. Submit one copy of the certification with original signatures and three additional copies.

Closure Certification Statement

Closure Log C-700-M-1

The one (1) hazardous waste container storage areas (S01) at the facility described in this document have been closed in accordance with the specifications in the approved closure plan. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

USEPA ID Number	Facility Name
Signature of Owner/Operator Date	Name and Title
Signature of Registered P.E. Date	Name of Registered P.E. and Illinois Registration Number
Mailing Address of P.E.:	Registered P.E.'s Seal:

WTS:sf/sp/359Y,6

STATE OF ILLINOIS
ENVIRONMENTAL PROTECTION AGENCY

IL 532-0357
ADM 39
054-002

Subject UNION PACIFIC RAILROAD (PRESENT)

Data RCRA CLOSURE

Reviewed by WILLIAM T SINNOTT II Date OCTOBER 6, 1993

TABLE of CONTENTS

Due 9/4/93 MM

BW
AH
WJS

CLOSURE LOG # : 700-M-1
FACILITY : UNION PACIFIC RR (PRESENT)
STATE ID # : 1630355007
FED ID # : ILD984774851
STATUS : A
TYPE :
NOTIFY RPMS : N

1st-RECD : 93/08/04
90-DUE : 93/11/02
1-MAILED :
APP or REJ :

CERTIFICATION DUE :
CLOSED :
UNITS CLOSED :
UNITS REMAIN :
G OR T STATUS:
COMMENTS :

LOCATION : DUPO
COUNTY : ST CLAIR
REVIEWER : WTS
GAU REVIEWER :
NOTIFY FOS : Y
NOTIFY CMS : Y
PN : NA
INSP :
2nd-SCHED :
2nd-RECD :
60-DUE :
2-MAILED :

CERTIFICATION RECD :
CLEAN CLOSURE :
CIL SENT :
PECL SENT :

CONTAM SOIL-Y/N/?: ABOVE PQL-Y/N/?: ABOVE CUO-Y/N/?:
CONTAM-VO/SVO/M/?:
CONTAM GW-Y/N/?: ABOVE PQL-Y/N/?: ABOVE CUO-Y/N/?:
CONTAM-VO/SVO/M/?:

REMEDIATION-PROP/IN PROG/COMPLETE/NA: VOLUME: UNIT-T/CY:

SOIL VENT-Y/N: AERATE-Y/N/ON/OFF: STABILIZE-Y/N/ON/OFF:
CAP IN PLACE-Y/N: BIOREM-Y/N: INCIN-Y/N/ON/OFF:
LANDFILL-Y/N/ON/OFF: TREATMENT-Y/N/ON/OFF: PUMP & TREAT GW-Y/N:

PROCESS 1:	AMOUNT 1:	UNIT1:	ADD/DEL:
PROCESS 2:	AMOUNT 2:	UNIT2:	ADD/DEL:
PROCESS 3:	AMOUNT 3:	UNIT3:	ADD/DEL:
PROCESS 4:	AMOUNT 4:	UNIT4:	ADD/DEL:
PROCESS 5:	AMOUNT 5:	UNIT5:	ADD/DEL:
PROCESS 6:	AMOUNT 6:	UNIT6:	ADD/DEL:

1) COMPLETE CLOSURE CHECKLIST
2) CALL FOS & MAKE SURE THESE ARE CORRECT AREAS TO CLOSE
3) STORAGE AREA INTEGRITY (CRACKS, GAPS, JOINTS, CURBS, ETC.)
4) STORAGE AREA RUNOFF/DRAINAGE
5) SAMPLING PARAMETERS W.R.T. WASTES MANAGED
6) SAMPLING METHODS AND LOCATIONS AND DEPTHS
7) ANALYTICAL METHODS (SW-846)
8) REVIEW NOTES
   a. Intro to Project -- Site name, location, brief description of submit
   b. Pertinent Site History
   c. Summary/Review/Evaluation of Submittal
   d. Identification of Final Action to be Taken
   e. Discussion of Final Action, Including Discussion of Final Letter
9) COMPUTER BLANKS

COMPLIANCE UNIT EVALUATION

THERE ARE NO OUTSTANDING RCRA VIOLATIONS. ____

THERE ARE NO OUTSTANDING SOLID WASTE VIOLATIONS ON THE COMPLIANCE UNIT'S TRACKING SYSTEM.* ✓

OUTSTANDING RCRA VIOLATIONS. ✓

OUTSTANDING SOLID WASTE VIOLATIONS.* ____

VIOLATION	EVALUATION DATE	REVIEWER	CIL DATE	PECL DATE	AWN DATE	EDG DATE
703.121(a)	6-23-92	Chris Cahnovsky		7-16-92		7-31-92
725.116 (a)						
725.151(a)						
725.155						
725.175						
725.212(a)						
725.271						
728.150(a)(2)						

CURC'S INITIALS _____

DATE 8-30-93

COMMENTS:

*THE COMPLIANCE UNIT HAS BEEN TRACKING SOLID WASTE VIOLATIONS SINCE MARCH 1, 1991. PLEASE CONTACT FOS FOR SOLID WASTE VIOLATIONS PRIOR TO THIS DATE.

CLOSURE LOG # : 699
FACILITY : UNION PACIFIC R R (FORMER)
STATE ID # : 1630355007
FED ID # : ILD984774851
STATUS : P
TYPE : F
NOTIFY RPMS : Y

1st-RECD : 93/04/13
90-DUE : 93/07/12
1-MAILED : 93/07/09
APP or REJ : APP

LOCATION : DUPO
COUNTY : ST CLAIR
REVIEWER : WTS
GAU REVIEWER :
NOTIFY FOS : Y
NOTIFY CMS : Y
PN :
INSP :
2nd-SCHED :
2nd-RECD :
60-DUE :
2-MAILED :

CERTIFICATION DUE : 94/03/15
CLOSED :
UNITS CLOSED : S01
UNITS REMAIN : NONE
G OR T STATUS:
COMMENTS :

CERTIFICATION RECD :
CLEAN CLOSURE :
CIL SENT :
PECL SENT :

CONTAM SOIL-Y/N/?: ? ABOVE PGL-Y/N/?: ? ABOVE CUO-Y/N/?: ?
CONTAM-VO/SVO/M/?: ?
CONTAM GW-Y/N/?: ? ABOVE PGL-Y/N/?: ? ABOVE CUO-Y/N/?: ?
CONTAM-VO/SVO/M/?: ?

REMEDIATION-PROP/IN PROG/COMPLETE/NA: NA VOLUME: UNIT-T/CY:

SOIL VENT-Y/N: AERATE-Y/N/ON/OFF: STABILIZE-Y/N/ON/OFF:
CAP IN PLACE-Y/N: BIOREM-Y/N: INCIN-Y/N/ON/OFF:
LANDFILL-Y/N/ON/OFF: TREATMENT-Y/N/ON/OFF: PUMP & TREAT GW-Y/N:

PROCESS 1: S01	AMOUNT 1: 6720	UNIT1: G	ADD/DEL : DEL
PROCESS 2:	AMOUNT 2:	UNIT2:	ADD/DEL:
PROCESS 3:	AMOUNT 3:	UNIT3:	ADD/DEL :
PROCESS 4:	AMOUNT 4:	UNIT4:	ADD/DEL:
PROCESS 5:	AMOUNT 5:	UNIT5:	ADD/DEL :
PROCESS 6:	AMOUNT 6:	UNIT6:	ADD/DEL:

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STATE OF ILLINOIS
ENVIRONMENTAL PROTECTION AGENCY

IL 532-0357
ADM 39
054-002

Subject UNION PACIFIC RAIL ROAD COMPANY

Data RCRA CLOSURE

Reviewed by WILLIAM T SINNOTT II Date 6-28-93

COMPLIANCE UNIT EVALUATION

CLOSURE LOG # : 699
FACILITY : UNION PACIFIC R R (FORMER)
STATE ID # : 1630355007
FED ID # : ILD984774851
STATUS : A
TYPE :
NOTIFY RPMS : Y

1st-RECD : 93/04/13
90-DUE : 93/07/12
1-MAILED :
APP or REJ :

LOCATION : DUPO
COUNTY : ST CLAIR
REVIEWER :
GAU REVIEWER :
NOTIFY FOS : Y
NOTIFY CMS : Y
PN :
INSP :
2nd-SCHED :
2nd-RECD :
60-DUE :
2-MAILED :

CERTIFICATION DUE :
CLOSED :
UNITS CLOSED :
UNITS REMAIN :
O OR T STATUS:
COMMENTS :

CERTIFICATION RECD :
CLEAN CLOSURE :
CIL SENT :
PECL SENT :

CONTAM SOIL-Y/N/?: ABOVE POL-Y/N/?: ABOVE CUO-Y/N/?:
CONTAM-VO/SVO/M/?:
CONTAM GW-Y/N/?: ABOVE POL-Y/N/?: ABOVE CUO-Y/N/?:
CONTAM-VO/SVO/M/?:

REMEDIATION-PROP/IN PROG/COMPLETE/NA: VOLUME: UNIT-T/CY:

SOIL VENT-Y/N: AERATE-Y/N/ON/OFF: STABILIZE-Y/N/ON/OFF:
CAP IN PLACE-Y/N: BIOREM-Y/N: INCIN-Y/N/ON/OFF:
LANDFILL-Y/N/ON/OFF: TREATMENT-Y/N/ON/OFF: PUMP & TREAT GW-Y/N:

PROCESS 1:	AMOUNT 1:	UNIT1:	ADD/DEL:
PROCESS 2:	AMOUNT 2:	UNIT2:	ADD/DEL:
PROCESS 3:	AMOUNT 3:	UNIT3:	ADD/DEL:
PROCESS 4:	AMOUNT 4:	UNIT4:	ADD/DEL:
PROCESS 5:	AMOUNT 5:	UNIT5:	ADD/DEL:
PROCESS 6:	AMOUNT 6:	UNIT6:	ADD/DEL:

RECEIVED
APR 23 1993
IEPA - BOL
PERMIT SECTION

1) COMPLETE CLOSURE CHECKLIST
2) CALL FOS & MAKE SURE THESE ARE CORRECT AREAS TO CLOSE
3) STORAGE AREA INTEGRITY (CRACKS, GAPS, JOINTS, CURBS, ETC.)
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COMPLIANCE UNIT EVALUATION

THERE ARE NO OUTSTANDING RCRA VIOLATIONS. ____

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VIOLATION	EVALUATION DATE	REVIEWER	CIL DATE	PECL DATE	AWN DATE	EDG DATE
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725.116(a)						
725.151(a)						
725.155						
725.175						
725.212(a)						
725.271						
728.150(a)(2)						

CURC'S INITIALS [illegible]

DATE 7-23-93

COMMENTS:

*THE COMPLIANCE UNIT HAS BEEN TRACKING SOLID WASTE VIOLATIONS SINCE MARCH 1, 1991. PLEASE CONTACT FOS FOR SOLID WASTE VIOLATIONS PRIOR TO THIS DATE.

STATE OF ILLINOIS
ENVIRONMENTAL PROTECTION AGENCY

IL 532-0357
ADM 39
054-002

Subject UNION PACIFIC RAILROAD

Data RCRA Closure

Reviewed by WILLIAM T SINNOTT II Date OCTOBER 6, 1993

TABLE of CONTENTS

Should you have any questions regarding this matter, please contact William T. Sinnott II at 217/524-3300.

Very truly yours,

Lawrence W. Eastep, P.E., Manager
Permit Section
Division of Land Pollution Control
Bureau of Land

LWE:JKM
WTS:JKM:mls/sp569Y/1-7
Attachment: Closure Certification Statement

cc: USEPA Region V -- George Hamper
Janet Zanowitz

bcc: Bureau File
Collinsville Region
Jim Moore
Bill Sinnott

Closure Certification Statement

Closure Log C-699-M-1

This statement is to be completed by both the responsible officer and by the registered professional engineer upon completion of closure. Submit one copy of the certification with original signatures and three additional copies.

The hazardous waste management storage unit at the facility described in this document been closed in accordance with the specifications in the approved closure plan. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

USEPA ID Number

Facility Name

Signature of Owner/Operator Date

Name and Title

Signature of Registered P.E. Date

Name of Registered P.E. and Illinois Registration Number

Mailing Address of P.E.:

Registered P.E.'s Seal:

WTS/mls/sp569Y/8

STATE OF ILLINOIS
ENVIRONMENTAL PROTECTION AGENCY

IL 532-0357
ADM 39
054-002

Subject UNION PACIFIC RAILROAD

Data RCRA Closure

Reviewed by WILLIAM J SINNOTT II

Date OCTOBER 6, 1993

COMPUTER SHEET

CLOSURE LOG # : 699-M-1
FACILITY : UNION PACIFIC RR (FORMER)
STATE ID # : 1630355007
FED ID # : ILD984774851
STATUS : P
TYPE : P
NOTIFY RPMS : N

LOCATION : DUPO
COUNTY : ST CLAIR
REVIEWER : WTS
GAU REVIEWER :
NOTIFY FOS : Y
NOTIFY CMS : Y
PH : NA
INSP :
2nd-SCHED :
2nd-RECD :
60-DUE :
2-MAILED :

1st-RECD : 93/08/04
90-DUE : 93/11/02
1-MAILED : 93/10/21
APP or REJ : APP

CERTIFICATION DUE :
CLOSED :
UNITS CLOSED :
UNITS REMAIN :
OR T STATUS:
COMMENTS :

CERTIFICATION RECD :
CLEAN CLOSURE :
CIL SENT :
PECL SENT :

CONTAM SOIL-Y/N/?: ABOVE PQL-Y/N/?: ABOVE CUQ-Y/N/?:
CONTAM-VO/SVO/M/?:
CONTAM GW-Y/N/?: ABOVE PQL-Y/N/?: ABOVE CUQ-Y/N/?:
CONTAM-VO/SVO/M/?:

EMEDIATION-PROP/IN PROG/COMPLETE/NA:

SOIL VENT-Y/N:
CAP IN PLACE-Y/N:
NDFILL-Y/N/ON/OFF:
AERATE-Y/N/ON/OFF:
BIOREM-Y/N:
TREATMENT-Y/N/ON/OFF:
VOLUME:
UNIT-T/CY:
STABILIZE-Y/N/ON/OFF:
INCIN-Y/N/ON/OFF:
PUMP & TREAT GW-Y/N:

OCESS 1:	AMOUNT 1:	UNIT1:	ADD/DEL:
OCESS 2:	AMOUNT 2:	UNIT2:	ADD/DEL:
NCESS 3:	AMOUNT 3:	UNIT3:	ADD/DEL:
OCESS 4:	AMOUNT 4:	UNIT4:	ADD/DEL:
OCESS 5:	AMOUNT 5:	UNIT5:	ADD/DEL:
OCESS 6:	AMOUNT 6:	UNIT6:	ADD/DEL:

COMPLETE CLOSURE CHECKLIST
CALL FOS & MAKE SURE THESE ARE CORRECT AREAS TO CLOSE
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COMPUTER BLANKS

STATE OF ILLINOIS
ENVIRONMENTAL PROTECTION AGENCY

IL 532-0357
ADM 39
054-002

Subject UNION PACIFIC RAILROAD

Data RCRA CLOSURE

Reviewed by WILLIAM T SINNOTT II Date OCTOBER 6, 1993

OUTSTANDING VIOLATIONS

Due 9/4/93 mm

BW ~~RW~~ WTS

CLOSURE LOG # : 699-M-1
FACILITY : UNION PACIFIC RR (FORMER)
STATE ID # : 1630355007
FED ID # : ILD984774851
STATUS : A
TYPE :
NOTIFY RPMS : N

1st-RECD : 93/08/04
90-DUE : 93/11/02
1-MAILED :
APP or REJ :

CERTIFICATION DUE :
CLOSED :
UNITS CLOSED :
UNITS REMAIN :
G OR T STATUS:
COMMENTS :

LOCATION : DUPO
COUNTY : ST CLAIR
REVIEWER : WTS
GAU REVIEWER :
NOTIFY FOS : Y
NOTIFY CMS : Y
PN : NA
INSP :
2nd-SCHED :
2nd-RECD :
60-DUE :
2-MAILED :

CERTIFICATION RECD :
CLEAN CLOSURE :
CIL SENT :
PECL SENT :

CONTAM SOIL-Y/N/?: ABOVE PQL-Y/N/?: ABOVE CUO-Y/N/?:
CONTAM-VO/SVO/M/?:
CONTAM GW-Y/N/?: ABOVE PQL-Y/N/?: ABOVE CUO-Y/N/?:
CONTAM-VO/SVO/M/?:

REMEDIATION-PROP/IN PROG/COMPLETE/NA: VOLUME: UNIT-T/CY:

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PROCESS 1:	AMOUNT 1:	UNIT1:	ADD/DEL:
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   c. Summary/Review/Evaluation of Submittal
   d. Identification of Final Action to be Taken
   e. Discussion of Final Action, Including Discussion of Final Letter
9) COMPUTER BLANKS

COMPLIANCE UNIT EVALUATION

THERE ARE NO OUTSTANDING RCRA VIOLATIONS. ___

THERE ARE NO OUTSTANDING SOLID WASTE VIOLATIONS ON THE COMPLIANCE UNIT'S TRACKING SYSTEM.* ✓

OUTSTANDING RCRA VIOLATIONS. ___

OUTSTANDING SOLID WASTE VIOLATIONS.* ✓

VIOLATION	EVALUATION DATE	REVIEWER	CIL DATE	PECL DATE	AWN DATE	EDG DATE
703.121(a) 725.116(a) 725.151(a) 725.155 725.175 725.212(a) 725.271 728.150(a)(2)	6-23-92	Chris Cahnovsky		7-16-92		7-31-92

CURC'S INITIALS [redacted]

DATE 8-30-93

COMMENTS:

*THE COMPLIANCE UNIT HAS BEEN TRACKING SOLID WASTE VIOLATIONS SINCE MARCH 1, 1991. PLEASE CONTACT FOS FOR SOLID WASTE VIOLATIONS PRIOR TO THIS DATE.

STATE OF ILLINOIS
ENVIRONMENTAL PROTECTION AGENCY

IL 532-0357
ADM 39
054-002

Subject UNION PACIFIC RAILROAD

Data RCRA CLOSURE

Reviewed by WILLIAM T SINNOTT II Date OCTOBER 6, 1993

JKM GUIDANCE

STATE OF ILLINOIS
ENVIRONMENTAL PROTECTION AGENCY

IL 532-0357
ADM 39
054-002

Subject _____

Data _____ Date _____

Reviewed by _____

(1) RE: UPRR ⇒ former storage area

(1.1) "This submittal was reviewed with plain old common sense in mind." not a very professional statement ⇒ PLEASE SHOW ME WHERE THIS IS.

(1.2) identify in your detailed notes exactly where you are making the changes in the submittal

✓ (1.3) in letter, put in general statement about what they were requesting to be modified

✓ (1.4) should include copy of previous approval letter in package

✓ (1.5) need to develop 2 ~~submittal~~ letters + 2 sets of review notes → one for the Current Area + One for the Former Area

I DID & THEY WERE ⇒ GIVEN TO YOU!

For example, what d you do in response to your review

(1.6) on p. 2 of your notes, you say "If indeed they are correct..."

⇑ it is your responsibility to determine whether they are indeed correct ⇒ is it reasonable for them to rely on analyses for pentachlo phenol ⇒ yes.

OVERALL, NOT LOOK TOO BAD

⇓ make edits + get letters back by Friday 10/15

JKH 10/8

(OVER)

Current Area

(1) notes not quite in right order ⇒ your review notes should be after the first

(2) make it clear in these notes + in the other UPRR what sections of your detailed review have to do w/ the former area + what have to do w/ the previous area

Guidance for Completing Review of the Union Pacific Projects

The following text is meant to provide guidance regarding the procedures which should be followed in completing the review of the above-referenced projects. This guidance is meant to supplement guidance provided in the documents enitled Guidance Regarding the Review of Closure Plans, (September 1992), Review of RCRA Soil Sampling/Analysis Report (June 1993) and Guidance for Review Notes for RCRA Closures (April 1993). Copies of these documents have previously been provided to you.

1. Information associated with a project which is submitted for LWE's signature and then sent to the file room must be comprised of and organized in accordance the following list:

   a. Final Agency letter

   b. Computer sheet

   c. Table of Contents for entire package.

   d. Comments from FOS, P&RS, GAU, etc.

   e. Guidance, if any, from JKM

   f. Review Notes

   g. Submittals

2. As noted above, a Table of Contents must be developed and included as part of the package sent to the file room. This table should be developed after the entire project is completed. Each item in the review package that is going to the file room should be identified in this table, as well as the number of pages which make up each item.

3. The review package sent to the file room should be well enough organized so that anyone reading them can understand the logic, history and work associated with the project which is the subject of the package. As such, you may want to provide a brief discussion of the various items in the review package as part of the Table of Contents.

4. General guidance regarding review notes

   a. Review notes should be developed to that they provide an informal report documenting what went in to your review efforts and the thought process you used in reviewing the project.

   b. Each page of the notes should be numbered, initialed and dated.

   c. Review notes should be well enough organized so that

anyone reading them can understand the logic, history

and work associated with your review.

d. Feel free to include copies of important documents as part of your notes. To do this, include them as attachments at the end of your notes and make sure you reference them and discuss what they are meant to depict in the text of your notes.

These attachments can also deal with various side issues in the overall project, and as such, can be review notes actually developed to address such issues. Due to the nature of reviewing a project, it may be necessary to break review notes up into various sections, based upon distinct subjects associated with the project overall.

In such cases, a summary document should be developed which ties together these separate sections and identifies the final conclusions reached during the review of the document.

e. Review notes should be developed in accordance with the following format:

1. **Introduction to Project.** This section of the review notes should consist of a completed form entitled "Introduction to Project" (copy attached)

2. **Pertinent Site History.** This section of the review notes should consist of a completed form entitled "Pertinent Site History" (copy attached)

3. **Detailed Review of Submittal.** This section of the review notes should be developed in accordance with the attached guidance.

4. **Identification of Final Action to be Taken.** This section of the review notes should briefly describe the final action to be taken.

5. **Discussion of Final Action to be Taken.** This section of the review notes should discuss the contents of the final letter, including an item by item discussion of all special conditions in the letter.

c/notes

- Final letters that go out should be more or less same as original letters, w/ edits reflecting ~~them~~ approved changes
  ⇒ make copy of what they provided regarding CUUs + send to Tom Hornshaw in a memo ⇒ by 8/27
- final draft + review notes to JKM by 10/15
- final to JKM for LWE signature by 10/22

STATE OF ILLINOIS
ENVIRONMENTAL PROTECTION AGENCY

IL 532-0357
ADM 39
054-002

Subject UNION PACIFIC RAILROAD

Data RCRA CLOSURE

Reviewed by WILLIAM J. SINNOTT II Date OCTOBER 6, 1993

INTRODUCTION TO PROJECT

I. INTRODUCTION TO PROJECT

Log No. 700-M-1

1. Facility Name UNION PACIFIC RAILROAD
2. Facility Location DUPO, ILLINOIS
3. Facility Contact Jeff McDERMOTT
   a. Telephone Number 402-271-4461
4. Facility IEPA ID No. 1630355007485
5. Facility USEPA ID No. ILD 984777
6. Log No. of Previous Activities Associated with Project 700
7. Number of Submittal Associated with Current Project Discussed in this package (1)
8. Information Regarding Each Submittal (Complete for each submittal made)
   a. Brief Description of Submittal THEY ARE ASKING US TO RECONSIDER OUR PREVIOUS POSITION ON OUR APPROVAL LETTER
   b. Date of Submittal: JULY 30, 1993
   c. Date submittal received: AUGUST 4, 1993
   d. Submitted by: UNION PACIFIC RAILROAD
   e. No. of pages submitted/title of reports submitted 5
   f. Reason submitted was made AGAIN, THEY ARE ASKING US TO RECONSIDER POSITION ON THEIR PERMIT
9. General Discussion of How Project Was Reviewed (complete here if only one submittal was made, delete otherwise)
   ITEM BY ITEM WAS SUMMARIZED & FOLLOWED BY A RESPONSE FROM THE WRITER

c/intropro

I. INTRODUCTION TO PROJECT
(continued)
(only complete if more than one submittal was made)

Log No. _____

8. Information Regarding Each Submittal (Complete for each submittal made)--continued, as necessary, if more than one submittal was made

N/A

a. Brief Description of Submittal _____

_____

_____

b. Date of Submittal: _____

c. Date submittal received: _____

d. Submitted by: _____

e. No. of pages submitted/title of reports submitted

_____

_____

f. Reason submittal was made _____

_____

_____

9. Discussion of how various submittals are related and how each were reviewed

_____

_____

_____

_____

_____

f5/intropro

II. PERTINENT SITE HISTORY

Log No. 700-71

(use for projects with previously approved closure plans)

1. Brief Description of Operations Carried out at Facility

THE FACILITY IS A RAILROAD YARD

2. Brief Description of Previous Agency Action

THE AGENCY APPROVED THEIR FIRST SUBMITTAL WITH CONDITIONS

3. Brief Identification of Units Undergoing Closure

IT IS ONE (1) 50l DRUM STORAGE INSIDE A TRAILER

4. location within facility of each hazardous waste management undergoing closure (refer to drawing within submittal or attach a copy of a site map (no bigger than 11x17), including an indication of whether it is located inside or outside a building

SEE ITEM (3) ABOVE

5. Detailed Description of Each Unit undergoing closure (Complete for each unit undergoing closure)(Continued)

Name of unit _____

j. Summary of closure activities required to be carried out, based on what was previously approved.

1. decontamination procedures Steam Clean & Triple Rinse

2. sample locations (horizontal and vertical; attach copies of maps, as appropriate) N/A

3. required sample analyses Pentachlorophenol

4. clean-up objectives 0.02 mg/kg for Pentachlorophenol

c/perthist

STATE OF ILLINOIS
ENVIRONMENTAL PROTECTION AGENCY

IL 532-0357
ADM 39
054-002

Subject UNION PACIFIC RAILROAD

Data ECRA CLOSURE

Reviewed by WILLIAM T SINNOTT II Date OCTOBER 6, 1993

REVIEW NOTES

STATE OF ILLINOIS
ENVIRONMENTAL PROTECTION AGENCY

IL 532-0357
ADM 39
054-002

Subject UNION PACIFIC RAILROAD
Data ECRA CLOSURE
Reviewed by WILLIAM J. SINNOTT II Date OCTOBER 5, 1993

REVIEW NOTES

AS A PREFACE, I WILL REVIEW THIS MODIFICATION REQUEST ITEM BY ITEM BEGINNING W/ ITEM 1.

ITEM (1) IN ESSENCE THEY REQUEST TO PUMP THE RAIN-WATER DIRECTLY ON THE GROUND WHICH HAS COLLECTED ON THE CONTAINMENT SLAB.

RESPONSE: I DO NOT SEE A SPECIFIC PROBLEM W/ THIS APPROACH; PROVIDED THERE IS NO BREACH W/ EITHER THE PRIMARY OR 2NDARY CONTAINMENT SYSTEMS. THIS I'D CONDITION

ITEM (2) IN ESSENCE THEY WANT CLARIFICATION ON THE (15) DAY NOTIFICATION REQUIREMENT UPON THE DISCOVERY OF CONTAMINATION

RESPONSE: WE WILL TELL THEM THAT THE (15) DAY NOTICE IS FROM THE TIME THE CONSULTANT HAS RECEIVED THE ANALYTICAL REPORTS. CHANGED CONDITION (3) APPROVAL LETTER.

STATE OF ILLINOIS
ENVIRONMENTAL PROTECTION AGENCY

IL 532-0357
ADM 39
054-002

Subject UNION PACIFIC RAILROAD

Data

Reviewed by WILLIAM T SINNOTT II Date OCTOBER 6, 1993

PHONE CONVERSATION

STATE OF ILLINOIS
ENVIRONMENTAL PROTECTION AGENCY

IL 532-0357
ADM 39
054-002

Subject UPRR / USPCI

Data

Reviewed by William T Sinnott II Date August 5, 1993

Today I spoke w/ Janet Yanowitz about their submittal. I told her the modification request (how logged in) will be looked at when it crosses my desk. She informed me that she had received the regulations. Appear to tell her that she has a Class I aquifer. She also informed me that she would be making no further submittals in the near term. She also informed me that the DuPo site was still dry.

WTS4

STATE OF ILLINOIS
ENVIRONMENTAL PROTECTION AGENCY

IL 532-0357
ADM 39
054-002

Subject UNION PACIFIC RAILROAD

Data RCRA CLOSURE

Reviewed by WILLIAM T SINNOTT II Date OCTOBER 6, 1993

SUBJECT SUBMITTAL NOTE: THIS IS AN APPROVAL LETTE

DISCUSSION of FINAL ACTION

(1) TELLS THEM ABOUT CLOSURE DOCUMENTATION REPORT

(2) SECTION 40 of THE ACT

(3) (15) DAYS CONTAMINATION

(4) AAZWOPER

(5) STEAM CLEAN & TRIPLE RINSE

(6) EVENT CANT CLEAN CLOSE

(7) RESPONSIBLE PART TRANSFER ACT

(8) FACILITY REPORTING UNIT

cc Collinsville

UNION PACIFIC RAILROAD COMPANY

K. R. (KEN) WELCH
Assistant Vice President
Environmental Management

Mailing Address:
Room 930
1416 Dodge Street
Omaha, Nebraska 68179-0930
Fax No. (402) 271-4461

S. W. (STEVE) BERKI
Director-Environmental Operations-Central
G. A. (AVERY) GRIMES
Director-Environmental Operations-Western
L. A. (LANNY) SCHMID
Director-Environmental Operations-Southern
R. L. (RICK) EADES
Director-Environmental Site Remediation
N. D. (NORM) SILER
Director-Environmental Technologies

Environmental Control
Dupo, IL

July 30, 1993

RECEIVED
AUG 04 1993
IEPA - DLPC
PERMIT SECTION

Mr. Larry Eastep
Permit Section
Division of Land Pollution Control
Bureau of Land
Illinois Environmental Protection Agency
2200 Churchill Road
Springfield, IL 62794-9276

Dear Mr. Eastep:

Please refer to your letter dated June 10, 1993, regarding the closure plan for the Present Drum Storage Facility and your letter dated July 9, 1993, regarding the closure plan for the Former Drum Storage Area at Dupo, Illinois. This letter provides our response to your letters. The Railroad's consultant, Ms. Janet Yanowitz, discussed these questions by telephone on July 22, 1993, with Mr. Jim Moore and Mr. William Sinnott of your Agency. Ms. Yanowitz informed Messrs. Moore and Sinnott that this letter would be forthcoming to confirm the telephone conversation. For clarity, quotations from your letters are highlighted in bold type.

June 10, 1993 letter - Present Drum Storage Facility

1. Page 4, No. 5 - **"All wash and rinse water shall be collected. This water must be analyzed for the characteristics of hazardous waste as set forth in 35 IAC 721, Subpart C. If the wash or rinse water samples exhibit a characteristic of hazardous waste then that material must be managed as a hazardous waste. In any event the material must be managed as a special waste."**

As confirmed in a letter dated January 20, 1993, from Mr. Jonathan Spencer of REACT Environmental Engineers, St. Louis, Missouri, to Mr. Chris Cahnovsky of the IEPA, the IEPA agreed that rainwater which was retained on the concrete storage pad at the Present Drum Storage Facility would be disposed of in the following manner:

"React will pump the water out of the containment slab sump and discharge it directly onto the ground adjacent to the concrete slab if there is no breach of either the primary or secondary containment systems described above (i.e. the drums

and the semi-trailers). Should REACT document a breach of either system, the accumulated water will be tested using an appropriate pentachlorophenol field screening kit (Ensys PENTA RISc or equivalent) prior to discharge."

This procedure was considered appropriate because the likelihood of breaching the primary and the secondary containment systems during the storage period is extremely remote. Also, since the facility is inspected on a weekly basis, any breach of containment would be noted and result in testing of the water. If there was no evidence of leakage, unwarranted sampling would not be performed. Note also that the IEPA considered it appropriate to sample only for pentachlorophenol as that was the only contaminant identified at the original spill site.

The procedure for disposal of rainwater will be followed for the duration of the Drum Storage Facility. We believe that the procedures for sampling and disposal of the rainwater are also appropriate for treatment of the concrete pad wash and rinse water, providing there is no evidence of any leakage from the trailers. Finally, we find no justification in treating the water used to rinse the pad any differently from rainwater which falls onto the pad.

2. Page 3, No. 3 - **"If contamination is detected, the Agency must be notified in writing within fifteen (15) days."**

Please clarify that this notification should be within fifteen days of the receipt of validated data by the Consultant.

<u>July 9, 1993 letter - Former Drum Storage Area</u>

1. Page 3, No. 3 - **"If contamination is detected, the Agency must be notified in writing within fifteen (15) days."**

Please clarify that this notification should be within fifteen days of the receipt of validated data by the Consultant.

2. Page 5, No. 5 - **"All soil samples required by the approved plan and this approval letter shall be analyzed for:**

   a. **Semi-volatile organic compounds using Method 8270 in SW-846. The PQLs identified in Table 1 of Method 8270 must be achieved during these analyses and all constituents listed in this table must be analyzed.**

   b. **All constituents listed in Condition 6 below.**

The detection limits achieved during the required analytical efforts must be at least as low as the CUO or ADL listed in Condition 6 below."

Table 1 of Method 8270 in SW-846 (Revision 2, November 1990)

does not include PQLs. Perhaps the IEPA intended to refer to Table 2, in which Estimated Quantitation Limits (EQLs) are specified. In either case, the tables contain many analytes which cannot be rigorously quantified using generally available GC/MS technologies. In practice, commercial laboratories offer only a fraction of these compounds in the 8270 analyses. The IEPA also specifies that the PQLs must be achieved during the analysis. However, as footnote b to Table 2 of 8270 states:

> "Sample EQLs are highly matrix-dependent. The EQLs listed herein are provided for guidance and may not always be achievable."

We agree to submit our samples to a laboratory certified by the IEPA. However, no laboratory will guarantee 'a priori' that specified quantitation limits can be met.

The selection by the IEPA of the 8270 compounds for analysis is not based on the specific issues of the project. There is no reason to believe that these compounds will be present at the site due to the storage of the pentachlorophenol waste. As recorded in the Final Closure Report for the Pentachlorophenol Spill Cleanup for the Mitchell Railyard near Collinsville, Illinois (USPCI, October 7, 1991):

> "The spill was discovered by the local fire department while responding to a fire at the railyard. Six drums were located at the east end of the driveway leading to the Lennox tower. All the drums had what appeared to be bullet holes and four were empty. Approximately 55 gallons of liquid remained in the other two drums and one was marked PENTACHLOROPHENOL RQ, NA 1993 COMBUSTIBLE LIQUID N.O.S."

Therefore, the only chemical compound identified in the original spill was pentachlorophenol. During the cleanup of the spill site, the IEPA required that the soil be analyzed for pentachlorophenol only. The Dupo site was used only for the storage of drums and is not the site of the spill. The area is unlikely to be contaminated by the material within the drums. It is inconsistent to require a more stringent sampling program at the Former Drum Storage Area than at the spill site.

Additionally, the Former Storage site is included in the study area for a Remedial Investigation that was completed by Burns & McDonnell in 1993. The RI report is presently being reviewed by Ms. Tammy Smith of IEPA. We request that the IEPA remove the requirement that all soil samples be analyzed for the broad suite of 8270 compounds and that the analysis be limited to Pentachlorophenol.

3. **Page 4, No. 6 - "...all soil...must meet the following cleanup objectives (CUOs):**

Constituent	Objective	ADL

2,4,6-Trichlorophenol (ADL)	0.0064	
2,4,5-Trichlorophenol	0.7	0.430
2,3,4,6-Tetrachlorophenol	0.21	0.660
Pentachlorophenol	0.02	
Chlorinated dioxins & furans	0.0006	

Although other chlorinated phenols and dioxins and furans may be found within manufactured pentachlorophenol, the concentrations are typically very low. Therefore, we propose that the soil be analyzed only for pentachlorophenol rather than all of these compounds. The pentachlorophenol would serve as a marker compound, indicating the possible presence of the other compounds.

Units were not provided for the CUOs (cleanup objectives) nor the ADLs. In the telephone conversation between Ms. Yanowitz and Mr. Sinnott, Mr. Sinnott indicated that the units for CUOs and ADLs were parts per million and that the acronym ADL meant "detection limit." In one of the cases in which ADLs were provided, it was higher than the cleanup objective. It will not be possible to prove the cleanup objectives have been met if the detection limits are higher than the cleanup objectives. Presumably this indicates that for compounds in which the detection limit is higher than the cleanup objective, a non-detect value would be adequate to indicate that the cleanup objective has been met. Note that in one case the ADL listed was equivalent to the EQL listed in Table 2 of the 8270 Method in SW-846. Please specify the basis for the other ADL provided.

Also note that the detection levels given, assuming that they are in ppm, are low, and may not be achievable. Detection limits are matrix-dependent, and therefore the detection limits cannot be guaranteed beforehand as noted in Item 2 above.

Mr. Sinnott also indicated in his conversation with Ms. Yanowitz that the cleanup objectives were developed by the Office of Chemical Safety within the IEPA. These cleanup objectives are considerably lower than the objectives proposed by the EPA (Proposed Subpart S, 40 CFR Part 264, in the Federal Register, July 27, 1990). In that document a cleanup level of 2,000 ppm for pentachlorophenol in soil is proposed based on human health risk. The IEPA proposed cleanup objective is five orders of magnitude lower than that proposed by EPA.

Mr. Sinnott also stated that the soil cleanup levels were dependent upon the classification of the aquifer beneath the site. He explained that the cleanup objectives were set conservatively, assuming that the aquifer was Class I. Mr. Sinnott will send a copy of the regulations which outline the criteria for classifying aquifers. We request that IEPA reevaluate the cleanup objectives at the site.

Please call Ms. Yanowitz at (303) 938-5533 or myself at (402) 271-3675 with any questions or comments you may have regarding this letter or the project. Thank you for your assistance in resolving

these issues promptly so that we may meet the scheduling requirements for closure of the Former Drum Storage Area.

Yours truly,

Jeffrey D. McDermott

Jeffrey D. McDermott, P.E.
Mgr. Environmental Site Remediation

C: Ms. Janet Yanowitz - USPCI
Ms. Tammy Smith - IEPA
Mr. Roy Farwell - St. Louis

I. INTRODUCTION TO PROJECT

Log No._____

1. Facility Name_____
2. Facility Location_____

   _____
3. Facility Contact_____

   a. Telephone Number_____
4. Facility IEPA ID No._____
5. Facility USEPA ID No._____
6. Log No. of Previous Activities Associated with Project _____
7. Number of Submittal Associated with Current Project Discussed in this package_____
8. Information Regarding Each Submittal (Complete for each submittal made)

   a. Brief Description of Submittal_____

      _____

      _____

   b. Date of Submittal: _____

   c. Date submittal received:_____

   d. Submitted by:_____

   e. No. of pages submitted/title of reports submitted

      _____

      _____

   f. Reason submittal was made_____

      _____

      _____
9. General Discussion of How Project Was Reviewed (complete here if only one submittal was made, delete otherwise)

   _____

   _____

   _____

I. INTRODUCTION TO PROJECT
(continued)

(only complete if more than one submittal was made)

Log No. _____

8. Information Regarding Each Submittal (Complete for each submittal made)--continued, as necessary, if more than one submittal was made

   a. Brief Description of Submittal _____

   _____

   _____

   b. Date of Submittal: _____

   c. Date submittal received: _____

   d. Submitted by: _____

   e. No. of pages submitted/title of reports submitted

   _____

   _____

   f. Reason submittal was made _____

   _____

   _____

9. Discussion of how various submittals are related and how each were reviewed

   _____

   _____

   _____

   _____

   _____

II. PERTINENT SITE HISTORY

Log No. _____

(use for projects with previously approved closure plans)

1. Brief Description of Operations Carried out at Facility

2. Brief Description of Previous Agency Action

3. Brief Identification of Units Undergoing Closure

4. Location within facility of each hazardous waste management undergoing closure (refer to drawing within submittal or attach a copy of a site map (no bigger than 11x17), including an indication of whether it is located inside or outside a building

5. Detailed Description of Each Unit undergoing closure (Complete for each unit undergoing closure)(Continued)

Name of unit _____

i. Summary of closure activities required to be carried out, based on what was previously approved.

1. decontamination procedures _____

2. sample locations (horizontal and vertical; attach copies of maps, as appropriate)

3. required sample analyses

4. clean-up objectives

c/porthist

Guidance Regarding a Detailed Review of a Submittal

A detailed review of a closure plan modification request should be carried out in accordance withe the guidance below and be documented through the development of review notes also as detailed below:

a. Identify in your notes the purpose of the submittal

b. Detailed review should be carried out in accordancw t=with the following guidance:

1. Summarize in your review notes what is said in each section of the submittal. Generally, you can summarize what a facility says in a paragraph in one line in your notes.

2. Evaluate what is said in each section

a. If the text is discussing closure activities which have been executed, were they carried out in accordance with the approved plan?

b. If the text is proposing something, does the proposal seem adequate? Does it meet the requirements of the applicable regulations and our normal procedures?

Document the results of this evaluation in writing in your review notes. These comments will form the basis of the final letter developed in response to the subject submittal.

3. Once the end of the submittal is reached, what conclusions are made? Summarize this in your review notes.

4. Do you agree with the conclusions, based upon your review of the submittal. Why or why not? Discuss in detail in your review notes.

5. What is the next step they propose be taken? Discuss in detail in your notes.

6. Do you agree with their proposal for the next step? Why or why not? What do you feel the next course of action should be. Document in your notes these conclusions.

7. Summarize/draw conclusions regarding your review.

c/detrevmo

STATE OF ILLINOIS
ENVIRONMENTAL PROTECTION AGENCY

IL 532-0357
ADM 39
054-002

Subject UNION PACIFIC RAILROAD

Data RCRA CLOSURE

Reviewed by WILLIAM T SINNOTT II Date OCTOBER 6, 1993

JKJ GUIDANCE

Guidance Regarding a Detailed Review of a Submittal

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5. What is the next step they propose be taken? Discuss in detail in your notes.

6. Do you agree with their proposal for the next step? Why or why not? What do you feel the next course of action should be. Document in your notes these conclusions.

7. Summarize/draw conclusions regarding your review.

c/detrevmo

Guidance for Completing Review of the Union Pacific Projects

The following text is meant to provide guidance regarding the procedures which should be followed in completing the review of the above-referenced projects. This guidance is meant to supplement guidance provided in the documents enitled Guidance Regarding the Review of Closure Plans, (September 1992), Review of RCRA Soil Sampling/Analysis Report (June 1993) and Guidance for Review Notes for RCRA Closures (April 1993). Copies of these documents have previously been provided to you.

1. Information associated with a project which is submitted for LWE's signature and then sent to the file room must be comprised of and organized in accordance the following list:

   a. Final Agency letter

   b. Computer sheet

   c. Table of Contents for entire package.

   d. Comments from FOS, P&RS, GAU, etc.

   e. Guidance, if any, from JKM

   f. Review Notes

   g. Submittals

2. As noted above, a Table of Contents must be developed and included as part of the package sent to the file room. This table should be developed after the entire project is completed. Each item in the review package that is going to the file room should be identified in this table, as well as the number of pages which make up each item.

3. The review package sent to the file room should be well enough organized so that anyone reading them can understand the logic, history and work associated with the project which is the subject of the package. As such, you may want to provide a brief discussion of the various items in the review package as part of the Table of Contents.

4. General guidance regarding review notes

   a. Review notes should be developed to that they provide an informal report documenting what went in to your review efforts and the thought process you used in reviewing the project.

   b. Each page of the notes should be numbered, initialed and dated.

   c. Review notes should be well enough organized so that

anyone reading them can understand the logic, history and work associated with your review.

d. Feel free to include copies of important documents as part of your notes. To do this, include them as attachments at the end of your notes and make sure you reference them and discuss what they are meant to depict in the text of your notes.

These attachments can also deal with various side issues in the overall project, and as such, can be review notes actually developed to address such issues. Due to the nature of reviewing a project, it may be necessary to break review notes up into various sections, based upon distinct subjects associated with the project overall.

In such cases, a summary document should be developed which ties together these separate sections and identifies the final conclusions reached during the review of the document.

e. Review notes should be developed in accordance with the following format:

1. **Introduction to Project.** This section of the review notes should consist of a completed form entitled "Introduction to Project" (copy attached)

2. **Pertinent Site History.** This section of the review notes should consist of a completed form entitled "Pertinent Site History" (copy attached)

3. **Detailed Review of Submittal.** This section of the review notes should be developed in accordance with the attached guidance.

4. **Identification of Final Action to be Taken.** This section of the review notes should briefly describe the final action to be taken.

5. **Discussion of Final Action to be Taken.** This section of the review notes should discuss the contents of the final letter, including an item by item discussion of all special conditions in the letter.

c/notes

- Final letters that goes out should be more or less same as original letters, w/ edits reflecting ~~from~~ approved changes
  ⇒ make copy of what they provided regarding CWDs + send to Tom Hornshaw in a memo ⇒ by 8/27

inal draft + review notes to JKM by 10/15
-final to JKM for LWE signature by 10/22

STATE OF ILLINOIS
ENVIRONMENTAL PROTECTION AGENCY

IL 532-0357
ADM 39
054-002

Subject UNION PACIFIC RAILROAD

Data RCRA CLOSURE

Reviewed by WILLIAM T SINNOTT II Date OCTOBER 6, 1993

INTRODUCTION TO PROJECT

I. INTRODUCTION TO PROJECT

Log No. 699-M-1

1. Facility Name UNION PACIFIC RAILROAD
2. Facility Location DUPO, ILLINOIS
3. Facility Contact JEFFREY McDERMOTT, P.E.
   a. Telephone Number 402-271-3675
4. Facility IEPA ID No. 1630355007
5. Facility USEPA ID No. ILD 984774851
6. Log No. of Previous Activities Associated with Project 699
7. Number of Submittal Associated with Current Project Discussed in this package 1
8. Information Regarding Each Submittal (Complete for each submittal made)
   a. Brief Description of Submittal THIS SUBMITTAL BRIEFLY REQUESTS THE PREVIOUS POSITION OF THE AGENCY
   b. Date of Submittal: JULY 30, 1993
   c. Date submittal received: AUGUST 4, 1993
   d. Submitted by: UNION PACIFIC RAIL ROAD
   e. No. of pages submitted/title of reports submitted 5
   f. Reason submittal was made WANTED US TO RECONSIDER SOME OF APPROVAL CONDITIONS
9. General Discussion of How Project Was Reviewed (complete here if only one submittal was made, delete otherwise) THE SUBMITTAL WAS REVIEWED WITH [illegible] IN MIND

c/intropro

I. INTRODUCTION TO PROJECT
(continued)
(only complete if more than one submittal was made)

Log No. 699-M-1

8. Information Regarding Each Submittal (Complete for each submittal made)--continued, as necessary, if more than one submittal was made

N/A ONLY ONE SUBMITTAL

a. Brief Description of Submittal_____

_____

_____

b. Date of Submittal: _____

c. Date submittal received:_____

d. Submitted by:_____

e. No. of pages submitted/title of reports submitted

_____

_____

f. Reason submittal was made_____

_____

_____

9. Discussion of how various submittals are related and how each were reviewed

_____

_____

_____

_____

_____

II. PERTINENT SITE HISTORY

Log No. 699-MH

(use for projects with previously approved closure plans)

1. Brief Description of Operations Carried out at Facility

THE FACILITY IS A RAILROAD YARD.

2. Brief Description of Previous Agency Action

THE AGENCY APPROVED THEIR CLOSURE PLAN WITH STANDARD CONDITIONS & MODIFICATIONS

3. Brief Identification of Units Undergoing Closure

1 (SOL): ONE HAZARDOUS WASTE CONTAINER DRUG STORAGE AREA

4. Location within facility of each hazardous waste management undergoing closure (refer to drawing within submittal or attach a copy of a site map (no bigger than 11x17), including an indication of whether it is located inside or outside a building

5. Detailed Description of Each Unit undergoing closure (Complete for each unit undergoing closure)(Continued)

Name of unit Former Drug Storage Area

j. Summary of closure activities required to be carried out, based on what was previously approved.

1. decontamination procedures N/A

2. sample locations (horizontal and vertical; attach copies of maps, as appropriate)

SAMPLE @ 0-6" + 18"-24

3. required sample analyses We will Take Them To Analyze for Pentachlorophenol Only

4. clean-up objectives

Pentachlorophenol ⇒ 0.02

c/perthist

Guidance Regarding a Detailed Review of a Submittal

A detailed review of a closure plan modification request should be carried out in accordance withe the guidance below and be documented through the development of review notes also as detailed below:

a. Identify in your notes the purpose of the submittal

b. Detailed review should be carried out in accordancw t=with the following guidance:

1. Summarize in your review notes what is said in each section of the submittal. Generally, you can summarize what a facility says in a paragraph in one line in your notes.

2. Evaluate what is said in each section

a. If the text is discussing closure activities which have been executed, were they carried out in accordance with the approved plan?

b. If the text is proposing something, does the proposal seem adequate? Does it meet the requirements of the applicable regulations and our normal procedures?

Document the results of this evaluation in writing in your review notes. These comments will form the basis of the final letter developed in response to the subject submittal.

3. Once the end of the submittal is reached, what conclusions are made? Summarize this in your review notes.

4. Do you agree with the conclusions, based upon your review of the submittal. Why or why not? Discuss in detail in your review notes.

5. What is the next step they propose be taken? Discuss in detail in your notes.

6. Do you agree with their proposal for the next step? Why or why not? What do you feel the next course of action should be. Document in your notes these conclusions.

7. Summarize/draw conclusions regarding your review.

c/detrevmo

STATE OF ILLINOIS
ENVIRONMENTAL PROTECTION AGENCY

IL 532-0357
ADM 39
054-002

Subject VPRR

Data RCRA Closure

Reviewed by WTSII Date OCTOBER 8, 1993

FINAL ACTION TO BE TAKEN

THE AGENCY SHALL APPROVE THIS MODIFICATION REQUEST
WTS

STATE OF ILLINOIS
ENVIRONMENTAL PROTECTION AGENCY

IL 532-0357
ADM 39
054-002

Subject Union Pacific RR

Data RCRA Closure

Reviewed by William T Sinnott II Date 10-8-93

Pertinent Site History

Facility Has An Already Approved Closure Plan.

STATE OF ILLINOIS
ENVIRONMENTAL PROTECTION AGENCY

IL 532-0357
ADM 39
054-002

Subject UNION PACIFIC RR
Data RCRA CLOSURE
Reviewed by WILLIAM T SINNOTT II Date OCTOBER 8, 1993

DISCUSSION of FINAL ACTION

1. CLOSURE DONE BY 4/16/94 ∫ CERTIFICATION 6/15/9
2. SECTION 40 of THE ILLINOIS ENVIRONMENTAL PROTECTION ACT.
3. CONTAMINATION REPORTED W/IN (15) days of RECEIPT BY THE FACILITY. (SEE REVIEW NOTES)
4. HAZ WASTE
5. WHAT TO ANALYZE FOR (SEE REVIEW NOTES)
6. CLEAN-UP - OBJECTIVE (SEE REVIEW NOTES)
7. FIND SOMETHING NOT IN CONDITION 6
8. DETERMINE VT & HZ EXTENT
9. FOLLOW SW-846
10. STEAM CLEAN & TRIPLE RINSE EVERYTHING
11. EXCAVATE @ ANY TIME
12. HOW TO DO SOIL EXCAVATION
13. MEET CUO's for EXCAVATION
14. WHAT TO DO if NOT EXCAVATED
15. GROUNDWATER
16. POST CLOSURE IN LIEU of CLEAN CLOSURE
17. DON'T MAKE A WASTE PILE
18. RESPONSIBLE PARTY TRANSFER ACT
19. FACILITY REPORTING UNIT
20. SW-846

STATE OF ILLINOIS
ENVIRONMENTAL PROTECTION AGENCY

IL 532-0357
ADM 39
054-002

Subject UNION PACIFIC RAILROAD

Data RCRA CLOSURE

Reviewed by WILLIAM J SINNOTT II Date OCTOBER 6, 1993

REVIEW NOTES

STATE OF ILLINOIS
ENVIRONMENTAL PROTECTION AGENCY

IL 532-0357
ADM 39
054-002

Subject UNION PACIFIC RAILROAD CO.
Data RCRA CLOSURE
Reviewed by WILLIAM T SINNOTT II Date OCTOBER 5, 1993

REVIEW NOTES

AS A PREFACE, I WILL REVIEW THIS MODIFICATION REQUEST ITEM BY ITEM BEGINNING W/ ITEM 1 dealt w/ Present Containment Structure (C-700)

ITEM (1) IN ESSENCE THEY REQUEST TO PUMP THE JUNE 10, 1993 LETTER ⇒ RAINWATER DIRECTLY ON THE GROUND WHIC HAS COLLECTED ON THE CONTAINMENT SLAB.

RESPONSE: I DO NOT SEE A SPECIFIC PROBCEM W/ THIS APPROACH; PROVIDED THERE IS NO BR W/ EITHER THE PRIMARY OR 2ND ARY CONTAINMENT SYSTEMS. ⇒ THIS WAS DELETED FROM CONDITION (6)

ITEM (2) IN ESSENCE THEY WANT CLARIFICATION ON THE (15) DAY NOTIFICATION REQUIREMENT UPON THE DISCOVERY OF CONTAMINATION.

RESPONSE: WE WILL TELL THEM THAT THE (15) DAY NOTIC IS FROM THE TIME THE CONSULTANT HAS RECEIV THE ANALYTICAL REPORTS. THIS WAS ADDED TO CONDITION (3)

STATE OF ILLINOIS
ENVIRONMENTAL PROTECTION AGENCY

IL 532-0357
ADM 39
054-002

2 of 2

Subject UNION PACIFIC RAILROAD

Data RCRA CLOSURE

Reviewed by WILLIAM T SINNOTT II Date OCTOBER 5, 1993

REVIEW NOTES (CONTINUED)

JULY 9, 1993 LETTER ⇐ letter associated with former Container Storage Area which is the subject of this package

(1) SEE AS ITEM 2 of P1 of my REVIEW NOTES

(2) SHOW WHAT WE HAD PREVIOUSLY TOLD THEY TO ANALYZE FOR ALL of 8270 THEY ALSO MAKE THE CLAIM THAT THEY ANALYZE FOR ONLY PENTACHLOROPHENOL

RESPONSE (2) THEY HAVE RAISED A LEGITIMATE CONCERN. I AM ~~NOT~~ CONVINCED THEY ARE CORRECT I BELIEVE THAT WE SHOULD MAINTAIN THAT THEY ANALYZE FOR PENTACHLOROPHENOL THIS A'D CONDITION (6) of APPROVAL LETTER

(3) THEY MAKE THE STATEMENT THAT, AGAIN; THEY ONLY WANT TO ANALYZE FOR PENTACHLOROPHENOL ; ~~THEY~~ THAT WE NEGATED TO PUT UNITS IN OUR APPROVAL LETTER.

RESPONSE (3) I DO NOT HAVE A PROBLEM WITH THEY ANALYZING FOR ONLY PENTACHLOROPHENOL. I WILL PUT CHANGED CONDITIONS 5 & 6 ALL NUMBERS ON CLEANUP OBJECTIVES #S OR UNITS ON MY NEXT LETTER.

702-388-7339 ⇒ JANET LAS VEGAS

JANET YANOWITE
USPCI
5665 FLATIRON PKWY.
BOULDER CO 80301

STATE OF ILLINOIS
ENVIRONMENTAL PROTECTION AGENCY

IL 532-0357
ADM 39
054-002

3 of 7

Subject UNION PACIFIC RAILROAD

Data RCRA CLOSURE

Reviewed by WILLIAM T. SINNOTT II Date OCTOBER 5, 1993

REVIEW NOTES

IN ESSENCE I AM GOING TO SEND THEM THE SAME PERMIT FOR THE SITE WITH THE APPROVED RESPONSES IN THE LETTER.

WTSII

STATE OF ILLINOIS
ENVIRONMENTAL PROTECTION AGENCY

IL 532-0357
ADM 39
054-002

Subject UNION PACIFIC RAILROAD

Data RCRA CLOSURE

Reviewed by WILLIAM T SINNOTT II Date OCTOBER 6, 1993

PHONE CONVERSATION

STATE OF ILLINOIS
ENVIRONMENTAL PROTECTION AGENCY

IL 532-0357
ADM 39
054-002

Subject UPRR \ USPCI

Data

Reviewed by William T Sinnott II Date August 5, 1993

Today I spoke w/ Janet Yanowitz about their submittal. I told her the modification request (how logged in) will be looked at when it crosses my desk. She informed me that she had received the regulations. Appear to tell her that she has a Class I aquifer. She also informed me that she would be making no further submittals in the near term. She also informed me that the Dupo site was still dry.

WTS4

c.c : Collinsville

C-699-M-2
C-700-M-1

JK
[illegible]

K. R. (KEN) WELCH
Assistant Vice President
Environmental Management

Mailing Address:
Room 930
1416 Dodge Street
Omaha, Nebraska 68179-0930
Fax No. (402) 271-4461

UNION PACIFIC RAILROAD COMPANY

S. W. (STEVE) BERKI
Director-Environmental Operations-Central
G. A. (AVERY) GRIMES
Director-Environmental Operations-Western
L. A. (LANNY) SCHMID
Director-Environmental Operations-Southern
R. L. (RICK) EADES
Director-Environmental Site Remediation
N. D. (NORM) SILER
Director-Environmental Technologies

Environmental Control
Dupo, IL

July 30, 1993

Mr. Larry Eastep
Permit Section
Division of Land Pollution Control
Bureau of Land
Illinois Environmental Protection Agency
2200 Churchill Road
Springfield, IL 62794-9276

RECEIVED
AUG 04 1993
IEPA - BOL
PERMIT SECTION

Dear Mr. Eastep:

Please refer to your letter dated June 10, 1993, regarding the closure plan for the Present Drum Storage Facility and your letter dated July 9, 1993, regarding the closure plan for the Former Drum Storage Area at Dupo, Illinois. This letter provides our response to your letters. The Railroad's consultant, Ms. Janet Yanowitz, discussed these questions by telephone on July 22, 1993, with Mr. Jim Moore and Mr. William Sinnott of your Agency. Ms. Yanowitz informed Messrs. Moore and Sinnott that this letter would be forthcoming to confirm the telephone conversation. For clarity, quotations from your letters are highlighted in bold type.

<u>June 10, 1993 letter - Present Drum Storage Facility</u>

1. Page 4, No. 5 - **"All wash and rinse water shall be collected. This water must be analyzed for the characteristics of hazardous waste as set forth in 35 IAC 721, Subpart C. If the wash or rinse water samples exhibit a characteristic of hazardous waste then that material must be managed as a hazardous waste. In any event the material must be managed as a special waste."**

As confirmed in a letter dated January 20, 1993, from Mr. Jonathan Spencer of REACT Environmental Engineers, St. Louis, Missouri, to Mr. Chris Cahnovsky of the IEPA, the IEPA agreed that rainwater which was retained on the concrete storage pad at the Present Drum Storage Facility would be disposed of in the following manner:

"React will pump the water out of the containment slab sump and discharge it directly onto the ground adjacent to the concrete slab if there is no breach of either the primary or secondary containment systems described above (i.e. the drums

and the semi-trailers). Should REACT document a breach of either system, the accumulated water will be tested using an appropriate pentachlorophenol field screening kit (Ensys PENTA RISc or equivalent) prior to discharge."

This procedure was considered appropriate because the likelihood of breaching the primary and the secondary containment systems during the storage period is extremely remote. Also, since the facility is inspected on a weekly basis, any breach of containment would be noted and result in testing of the water. If there was no evidence of leakage, unwarranted sampling would not be performed. Note also that the IEPA considered it appropriate to sample only for pentachlorophenol as that was the only contaminant identified at the original spill site.

The procedure for disposal of rainwater will be followed for the duration of the Drum Storage Facility. We believe that the procedures for sampling and disposal of the rainwater are also appropriate for treatment of the concrete pad wash and rinse water, providing there is no evidence of any leakage from the trailers. Finally, we find no justification in treating the water used to rinse the pad any differently from rainwater which falls onto the pad.

2. Page 3, No. 3 - **"If contamination is detected, the Agency must be notified in writing within fifteen (15) days."**

Please clarify that this notification should be within fifteen days of the receipt of validated data by the Consultant.

<u>July 9, 1993 letter - Former Drum Storage Area</u>

1. Page 3, No. 3 - **"If contamination is detected, the Agency must be notified in writing within fifteen (15) days."**

Please clarify that this notification should be within fifteen days of the receipt of validated data by the Consultant.

2. Page 5, No. 5 - **"All soil samples required by the approved plan and this approval letter shall be analyzed for:**

   a. Semi-volatile organic compounds using Method 8270 in SW-846. The PQLs identified in Table 1 of Method 8270 must be achieved during these analyses and all constituents listed in this table must be analyzed.

   b. All constituents listed in Condition 6 below.

The detection limits achieved during the required analytical efforts must be at least as low as the CUO or ADL listed in Condition 6 below."

Table 1 of Method 8270 in SW-846 (Revision 2, November 1990)

does not include PQLs. Perhaps the IEPA intended to refer to Table 2, in which Estimated Quantitation Limits (EQLs) are specified. In either case, the tables contain many analytes which cannot be rigorously quantified using generally available GC/MS technologies. In practice, commercial laboratories offer only a fraction of these compounds in the 8270 analyses. The IEPA also specifies that the PQLs must be achieved during the analysis. However, as footnote b to Table 2 of 8270 states:

> "Sample EQLs are highly matrix-dependent. The EQLs listed herein are provided for guidance and may not always be achievable."

We agree to submit our samples to a laboratory certified by the IEPA. However, no laboratory will guarantee 'a priori' that specified quantitation limits can be met.

The selection by the IEPA of the 8270 compounds for analysis is not based on the specific issues of the project. There is no reason to believe that these compounds will be present at the site due to the storage of the pentachlorophenol waste. As recorded in the Final Closure Report for the Pentachlorophenol Spill Cleanup for the Mitchell Railyard near Collinsville, Illinois (USPCI, October 7, 1991):

> "The spill was discovered by the local fire department while responding to a fire at the railyard. Six drums were located at the east end of the driveway leading to the Lennox tower. All the drums had what appeared to be bullet holes and four were empty. Approximately 55 gallons of liquid remained in the other two drums and one was marked PENTACHLOROPHENOL RQ, NA 1993 COMBUSTIBLE LIQUID N.O.S."

Therefore, the only chemical compound identified in the original spill was pentachlorophenol. During the cleanup of the spill site, the IEPA required that the soil be analyzed for pentachlorophenol only. The Dupo site was used only for the storage of drums and is not the site of the spill. The area is unlikely to be contaminated by the material within the drums. It is inconsistent to require a more stringent sampling program at the Former Drum Storage Area than at the spill site.

Additionally, the Former Storage site is included in the study area for a Remedial Investigation that was completed by Burns & McDonnell in 1993. The RI report is presently being reviewed by Ms. Tammy Smith of IEPA. We request that the IEPA remove the requirement that all soil samples be analyzed for the broad suite of 8270 compounds and that the analysis be limited to Pentachlorophenol.

3. **Page 4, No. 6 - "...all soil...must meet the following cleanup objectives (CUOs):**

Constituent	**Objective**	**ADL**

2,4,6-Trichlorophenol (ADL)	0.0064	0.430
2,4,5-Trichlorophenol	0.7	0.660
2,3,4,6-Tetrachlorophenol	0.21	
Pentachlorophenol	0.02	
Chlorinated dioxins & furans	0.0006	

Although other chlorinated phenols and dioxins and furans may be found within manufactured pentachlorophenol, the concentrations are typically very low. Therefore, we propose that the soil be analyzed only for pentachlorophenol rather than all of these compounds. The pentachlorophenol would serve as a marker compound, indicating the possible presence of the other compounds.

Units were not provided for the CUOs (cleanup objectives) nor the ADLs. In the telephone conversation between Ms. Yanowitz and Mr. Sinnott, Mr. Sinnott indicated that the units for CUOs and ADLs were parts per million and that the acronym ADL meant "detection limit." In one of the cases in which ADLs were provided, it was higher than the cleanup objective. It will not be possible to prove the cleanup objectives have been met if the detection limits are higher than the cleanup objectives. Presumably this indicates that for compounds in which the detection limit is higher than the cleanup objective, a non-detect value would be adequate to indicate that the cleanup objective has been met. Note that in one case the ADL listed was equivalent to the EQL listed in Table 2 of the 8270 Method in SW-846. Please specify the basis for the other ADL provided.

Also note that the detection levels given, assuming that they are in ppm, are low, and may not be achievable. Detection limits are matrix-dependent, and therefore the detection limits cannot be guaranteed beforehand as noted in Item 2 above.

Mr. Sinnott also indicated in his conversation with Ms. Yanowitz that the cleanup objectives were developed by the Office of Chemical Safety within the IEPA. These cleanup objectives are considerably lower than the objectives proposed by the EPA (Proposed Subpart S, 40 CFR Part 264, in the Federal Register, July 27, 1990). In that document a cleanup level of 2,000 ppm for pentachlorophenol in soil is proposed based on human health risk. The IEPA proposed cleanup objective is five orders of magnitude lower than that proposed by EPA.

Mr. Sinnott also stated that the soil cleanup levels were dependent upon the classification of the aquifer beneath the site. He explained that the cleanup objectives were set conservatively, assuming that the aquifer was Class I. Mr. Sinnott will send a copy of the regulations which outline the criteria for classifying aquifers. We request that IEPA reevaluate the cleanup objectives at the site.

Please call Ms. Yanowitz at (303) 938-5533 or myself at (402) 271-3675 with any questions or comments you may have regarding this letter or the project. Thank you for your assistance in resolving

these issues promptly so that we may meet the scheduling requirements for closure of the Former Drum Storage Area.

Yours truly,

Jeffrey D. McDermott

Jeffrey D. McDermott, P.E.
Mgr. Environmental Site Remediation

C: Ms. Janet Yanowitz - USPCI
Ms. Tammy Smith - IEPA
Mr. Roy Farwell - St. Louis

STATE OF ILLINOIS
ENVIRONMENTAL PROTECTION AGENCY

IL 532-0357
ADM 39
054-002

Subject UNION PACIFIC RAILROAD

Data RCRA CLOSURE

Reviewed by WILLIAM J. SINNOTT II Date OCTOBER 6, 1993

COMPUTER TRACKING SHEET

CLOSURE LOG # : 700-M-1
FACILITY : UNION PACIFIC RR (PRESENT)
STATE ID # : 1630355007
FED ID # : ILD984774851
STATUS : P
TYPE :
NOTIFY RPMS : N

1st-RECD : 93/08/04
90-DUE : 93/11/02
1-MAILED : 93/10/21
APP or REJ : APP

CERTIFICATION DUE :
CLOSED :
UNITS CLOSED :
UNITS REMAIN :
G OR T STATUS:
COMMENTS :

LOCATION : DUPO
COUNTY : ST CLAIR
REVIEWER : WTS
GAU REVIEWER :
NOTIFY FOS : Y
NOTIFY CMS : Y
PN : NA
INSP :
2nd-SCHED :
2nd-RECD :
60-DUE :
2-MAILED :

CERTIFICATION RECD :
CLEAN CLOSURE :
CIL SENT :
PECL SENT :

CONTAM SOIL-Y/N/?: ABOVE PQL-Y/N/?: ABOVE CUO-Y/N/?:
CONTAM-VO/SVO/M/?:
CONTAM GW-Y/N/?: ABOVE PQL-Y/N/?: ABOVE CUO-Y/N/?:
CONTAM-VO/SVO/M/?:

REMEDIATION-PROP/IN PROG/COMPLETE/NA: VOLUME: UNIT-T/CY:

SOIL VENT-Y/N: AERATE-Y/N/ON/OFF: STABILIZE-Y/N/ON/OFF:
CAP IN PLACE-Y/N: BIOREM-Y/N: INCIN-Y/N/ON/OFF:
LDFILL-Y/N/ON/OFF: TREATMENT-Y/N/ON/OFF: PUMP & TREAT GW-Y/N:

PROCESS 1:	AMOUNT 1:	UNIT1:	ADD/DEL:
PROCESS 2:	AMOUNT 2:	UNIT2:	ADD/DEL:
PROCESS 3:	AMOUNT 3:	UNIT3:	ADD/DEL:
PROCESS 4:	AMOUNT 4:	UNIT4:	ADD/DEL:
PROCESS 5:	AMOUNT 5:	UNIT5:	ADD/DEL:
PROCESS 6:	AMOUNT 6:	UNIT6:	ADD/DEL:

1) COMPLETE CLOSURE CHECKLIST
2) CALL FOS & MAKE SURE THESE ARE CORRECT AREAS TO CLOSE
3) STORAGE AREA INTEGRITY (CRACKS, GAPS, JOINTS, CURBS, ETC.)
4) STORAGE AREA RUNOFF/DRAINAGE
5) SAMPLING PARAMETERS W.R.T. WASTES MANAGED
6) SAMPLING METHODS AND LOCATIONS AND DEPTHS
7) ANALYTICAL METHODS (SW-846)
8) REVIEW NOTES
   a. Intro to Project -- Site name, location, brief description of submitta
   b. Pertinent Site History
   c. Summary/Review/Evaluation of Submittal
   d. Identification of Final Action to be Taken
   e. Discussion of Final Action, Including Discussion of Final Letter
9) COMPUTER BLANKS

STATE OF ILLINOIS
ENVIRONMENTAL PROTECTION AGENCY

IL 532-0357
ADM 39
054-002

Subject UNION PACIFIC
Data RCRA CLOSURE
Reviewed by WILLIAM T SINNOTT II Date OCTOBER 6, 1993

OUTSTANDING VIOLATIONS

Facility No.: 1630355007

DATE: April 26, 1993

Public Notice No.: 93013

NOTICE OF CLOSURE
CLOSURE NO. C-700 & 699

Plans to close a present drum storage area and a former drum storage area at the Union Pacific Railroad (UPRR) rail yard in Dupo, Illinois have been submitted to the Illinois Environmental Protection Agency (IEPA) pursuant to Subpart G of 35 Ill. Adm. Code 725. The hazardous waste units consist of four trailers which sit on a concrete slab surrounded by an 8-inch concrete curb. The storage areas contain or had contained drums containing liquids and solids contaminated with pentachlorophenol (PCP). The drums originated from a March 1990 spill and emergency cleanup at the UPRR Mitchell rail yard near Collinsville, Illinois. The facility will remain in operation during and following closure of the hazardous waste management units described in this notice.

At this time the IEPA is also requesting that the facility provide information concerning any prior release of hazardous waste constituents from any solid waste management facility on the site.

Within 30 days of the first publication date of this notice, interested persons are invited to submit written comments on the proposed closure plans, request modifications of the plans, or provide information on the release, at any time, of hazardous waste constituents from the facility. Written comments must be addressed to IEPA, Government and

Community Affairs, Attn: Pam Howard 2200 Churchill Road, P. O. Box 19276, Springfield, Illinois 62794-9276, telephone number 217/782-5562.

The hazardous waste management units must be closed in accordance with the standards set forth in the Environmental Protection Act, Ill. Rev. Stat., Ch. 111 1/2 Pars. 1001 et seq., and regulations adopted thereunder.

The proposed closure plans, closure performance requirements, and other documents are available for inspection and may be copied at the IEPA's Springfield headquarters.

An appointment to inspect or copy the proposed closure plans and other documents must be made in advance by contacting the Bureau of Land, Freedom of Information Act (FOIA) coordinator at 2200 Churchill Road, P. O. Box 19276, Springfield, Illinois 62794-9276, at telephone number 217/782-6760. Please refer to the closure numbers under the heading at the top of this advertisement when contacting the FOIA coordinator.

In response to requests or at the discretion of the IEPA, a public hearing may be held to clarify one or more issues concerning the proposed closure plans. Public notice will be issued 30 days before any public hearing.

XXXXXXXXX

CLOSURE LOG # : 700
FACILITY : UNION PACIFIC R R (PRESENT)
STATE ID # : 1630355007
FED ID # : ILD984774851
STATUS : P
TYPE :
NOTIFY RPMS : Y

1st-RECD : 93/04/13
90-DUE : 93/07/12
1-MAILED : 93/06/10
APP or REJ : APP

CERTIFICATION DUE : N/A
CLOSED :
UNITS CLOSED :
UNITS REMAIN :
G OR T STATUS:
COMMENTS :

LOCATION : DUPO
COUNTY : ST CLAIR
REVIEWER : WTS
GAU REVIEWER :
NOTIFY FOS : Y
NOTIFY CMS : Y
PN :
INSP :
2nd-SCHED :
2nd-RECD :
60-DUE :
2-MAILED :

CERTIFICATION RECD :
CLEAN CLOSURE :
CIL SENT :
PECL SENT :

CONTAM SOIL-Y/N/?: N ABOVE PQL-Y/N/?: N ABOVE CUO-Y/N/?: N
CONTAM-VO/SVO/M/?: N
CONTAM GW-Y/N/?: N ABOVE PQL-Y/N/?: N ABOVE CUO-Y/N/?: N
CONTAM-VO/SVO/M/?: N

REMEDIATION-PROP/IN PROG/COMPLETE/NA: NA VOLUME: UNIT-T/CY:

SOIL VENT-Y/N: AERATE-Y/N/ON/OFF: STABILIZE-Y/N/ON/OFF:
CAP IN PLACE-Y/N: BIOREM-Y/N: INCIN-Y/N/ON/OFF:
LANDFILL-Y/N/ON/OFF: TREATMENT-Y/N/ON/OFF: PUMP & TREAT GW-Y/N:

PROCESS 1: S01	AMOUNT 1: 6720	UNIT1: G	ADD/DEL: DEL
PROCESS 2:	AMOUNT 2:	UNIT2:	ADD/DEL:
PROCESS 3:	AMOUNT 3:	UNIT3:	ADD/DEL:
PROCESS 4:	AMOUNT 4:	UNIT4:	ADD/DEL:
PROCESS 5:	AMOUNT 5:	UNIT5:	ADD/DEL:
PROCESS 6:	AMOUNT 6:	UNIT6:	ADD/DEL:

1) COMPLETE CLOSURE CHECKLIST
2) CALL FOS & MAKE SURE THESE ARE CORRECT AREAS TO CLOSE
3) STORAGE AREA INTEGRITY (CRACKS, GAPS, JOINTS, CURBS, ETC.)
4) STORAGE AREA RUNOFF/DRAINAGE
5) SAMPLING PARAMETERS W.R.T. WASTES MANAGED
6) SAMPLING METHODS AND LOCATIONS AND DEPTHS
7) ANALYTICAL METHODS (SW-846)
8) REVIEW NOTES
   a. Intro to Project -- Site name, location, brief description of submitt
   b. Pertinent Site History
   c. Summary/Review/Evaluation of Submittal
   d. Identification of Final Action to be Taken
   e. Discussion of Final Action, Including Discussion of Final Letter
9) COMPUTER BLANKS

Due 5/13/93

BW
~~RR~~
~~JKM~~
WTS

CLOSURE LOG # : 700
FACILITY : UNION PACIFIC R R (PRESENT)
STATE ID # : 1630355007
FED ID # : ILD984774851
STATUS : A
TYPE :
NOTIFY RPMS : Y

LOCATION : DUPO
COUNTY : ST CLAIR
REVIEWER :
GAU REVIEWER :
NOTIFY FOS : Y
NOTIFY CMS : Y
PM :
INSP :

1st-RECD : 93/04/13
90-DUE : 93/07/12
1-MAILED :
APP or REJ :

2nd-SCHED :
2nd-RECD :
60-DUE :
2-MAILED :

CERTIFICATION DUE :
CLOSED :
UNITS CLOSED :
UNITS REMAIN :
G OR T STATUS:
COMMENTS :

CERTIFICATION RECD :
CLEAN CLOSURE :
CIL SENT :
PECL SENT :

CONTAM SOIL-Y/N/?: ABOVE PQL-Y/N/?: ABOVE CUO-Y/N/?:
CONTAM-VO/SVO/M/?:
CONTAM GW-Y/N/?: ABOVE PQL-Y/N/?: ABOVE CUO-Y/N/?:
CONTAM-VO/SVO/M/?:

REMEDIATION-PROP/IN PROG/COMPLETE/NA: VOLUME: UNIT-T/CY:

SOIL VENT-Y/N: AERATE-Y/N/ON/OFF: STABILIZE-Y/N/ON/OFF:
CAP IN PLACE-Y/N: BIOREM-Y/N: INCIN-Y/N/ON/OFF:
LANDFILL-Y/N/ON/OFF: TREATMENT-Y/N/ON/OFF: PUMP & TREAT GW-Y/N:

PROCESS 1: AMOUNT 1: UNIT1: ADD/DEL:
PROCESS 2: AMOUNT 2: UNIT2: ADD/DEL:
PROCESS 3: AMOUNT 3: UNIT3: ADD/DEL:
PROCESS 4: AMOUNT 4: UNIT4: ADD/DEL:
PROCESS 5: AMOUNT 5: UNIT5: ADD/DEL:
PROCESS 6: AMOUNT 6: UNIT6: ADD/DEL:

RECEIVED
APR 23 1993
IEPA - BOL
PERMIT SECTION

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9) COMPUTER BLANKS

State of Illinois
ENVIRONMENTAL PROTECTION AGENCY

2200 Churchill Road, Springfield, IL 62794-9276

Mary A. Gade, Director

217/524-3300

US EPA

July 9, 1993

Jeffrey D. McDermott, P.E.
Union Pacific Railroad Company
Room 930
1416 Dodge Street
Omaha, Nebraska 68179-0930

Re: 1630355007 -- St. Clair County
Union Pacific Railroad Company
ILD984774851
Log No. C-699
Received: April 13, 1993
RCRA Closure

Dear Mr. McDermott:

The closure plan which you submitted, prepared by USPCI, Inc. has been reviewed by this Agency. Your partial closure plan to close the hazardous waste container (S01) storage area referred to as the Former Drum Storage Area at the above-referenced facility is hereby approved subject to the following conditions and modifications:

1. Closure activities must be completed by January 15, 1994. When closure is complete, the owner or operator must submit to the Agency certification both by the owner or operator and by an independent registered professional engineer that the facility has been closed in accordance with the specifications in the approved closure plan. This certification must be received at this Agency within sixty (60) days after closure, or by March 15, 1994. These dates may be revised if Union Pacific finds that additional time is necessary to complete all required closure activities and Union Pacific demonstrates to the Agency that it is attempting to complete closure in a timely manner.

   The attached closure certification form must be used. Signatures must meet the requirements of 35 Ill. Adm. Code Section 702.126. The independent engineer should be present at all critical, major points (activities) during the closure. These might include soil sampling, soil removal, backfilling, final cover placement, etc. The frequency of inspections by the independent engineer must be sufficient to determine the adequacy of each critical activity. Financial assurance must be maintained for the units approved for closure herein until the Agency approves the facility's closure certification.

   The Illinois Professional Engineering Act (Ill. Rev. Stat., Ch. 111, par. 5101 et. seq.) requires that any person who practices professional engineering in the State of Illinois or implies that he (she) is a professional engineer must be registered under the Illinois Professional

Engineering Act (par. 5101, Sec. 1). Therefore, any certification or engineering services which are performed for a closure plan in the State of Illinois must be done by an Illinois P.E.

Plans and specifications, designs, drawings, reports, and other documents rendered as professional engineering services, and revisions of the above must be sealed and signed by a professional engineer in accordance with par. 5119, sec. 13.1 of the Illinois Professional Engineering Act.

As part of the closure certification, to document the closure activities at your facility, a Closure Documentation Report which must be submitted which includes the following:

a. The volume of waste, waste residue and contaminated soil (if any) removed. The term waste includes wastes resulting from decontamination activities.

b. Scaled drawings showing the horizontal and vertical boundaries of the extent of any soil removal effort.

c. A description of the method of waste handling and transport.

d. The waste manifest numbers.

e. Copies of the waste manifests.

f. Information documenting the results of all sampling/analysis efforts. The goal of presenting this information should be to describe, in a logical manner, the activities and results associated with the sampling/analysis effort. At a minimum, this information must include:

    1. identification of the reason for the sampling/analysis effort and the goals of the effort;

    2. a summary in tabular form of all analytical data, including all quality assurance/quality control data;

    3. a scaled drawing showing the horizontal location from which all soil samples were collected;

    4. identification of the depth and vertical interval from which each sample was collected;

    5. a description of the soil sampling procedures, sample preservation procedures and chain of custody procedures;

    6. identification of the test method used and detection limits achieved, including sample preparation, sample dilution (if necessary) and analytical inferences;

7. copies of the final laboratory report sheets, including final sheets reporting all quality assurance/quality assurance dates;

8. visual classification of each soil sample in accordance with ASTM D-2488;

9. a summary of all procedures used for quality assurance/quality control, including the results of these procedures; and

10. a discussion of the data, as it relates to the overall goal of the sampling/analysis effort.

g. Color photo documentation of closure. Document conditions before, during and after closure.

h. A chronological summary of closure activities and the cost involved.

The original and two (2) copies of all certifications, logs, or reports which are required to be submitted to the Agency by the facility should be mailed to the following address:

Illinois Environmental Protection Agency
Bureau of Land -- #33
Permit Section
2200 Churchill Road
Post Office Box 19276
Springfield, Illinois 62794-9276

2. If the Agency determines that implementation of this closure plan fails to satisfy the requirements of 35 Ill. Adm. Code, Section 725.211, the Agency reserves the right to amend the closure plan. Revisions of closure plans are subject to the appeal provisions of Section 40 of the Illinois Environmental Protection Act.

3. If contamination is detected, the Agency must be notified in writing within fifteen (15) days. A revised closure plan addressing remediation of the contamination detected must be submitted within timeframes established by the Agency.

4. Under the provisions of 29 CFR 1910 (51 FR 15,654, December 19, 1986), cleanup operations must meet the applicable requirements of OSHA's Hazardous Waste Operations and Emergency Response standard. These requirements include hazard communication, medical surveillance, health and safety programs, air monitoring, decontamination and training. General site workers engaged in activities that expose or potentially expose them to hazardous substances must receive a minimum of 40 hours of safety and health training off site plus a minimum of three days of actual field experience under the direct supervision of a trained experienced

supervisor. Managers and supervisors at the cleanup site must have at least an additional eight hours of specialized training on managing hazardous waste operations.

5. All soil samples required by the approved plan and this approval letter shall be analyzed for:

   a. Semi-volatile organic compounds using Method 8270 in SW-846. The PQLs identified in Table 1 of Method 8270 must be achieved during these analyses and all constituents listed in this table must be analyzed for.

   b. All constituents listed in Condition 6 below.

   The detection limits achieved during the required analytical efforts must be at least as low as the CUO or ADL listed in Condition 6 below, whichever is higher.

6. To ensure the clean closure requirements of 35 IAC 725.211 and 725.214 are met, all soil which remains beneath and around the location of such unit(s) must meet the following cleanup objectives (CUOs):

Constituent	Objective	ADL
2,4,6-Trichlorophenol (ADL)	0.0064	0.430
2,4,5-Trichlorophenol	0.7	0.660
2,3,4,6-Tetrachlorophenol	0.21	
Pentachlorophenol	0.02	
Chlorinated dioxins & Furans	0.0006	

7. The Agency shall be notified in writing if contaminants not listed in Condition 6 are detected above their respective practical quantitation limit. This notification shall identify the additional constituents detected and the concentration at which they were detected. The Agency will review this information and establish cleanup objectives for the newly detected contaminants, if necessary. The sampling and analysis effort being carried out to determine the extent of contamination shall not be delayed while the Agency is reviewing this information.

8. If soil is encountered during the sampling/analysis efforts required by Condition 5 above which contains contaminants above the CUOs established in Condition 6 above, the additional soil samples must be collected, as necessary to determine the horizontal and vertical extent of soil which exceed these CUOs. The procedures used to collect and analyze these samples must be in accordance with those approved by this letter. The procedures used to determine the horizontal and vertical locations from which soil samples are to be collected in accordance with Sections 13.a and 13.b of the Agency's RCRA closure plan instructions (revised December 1990). However, no random sampling shall be used to make this determination.

9. All soil samples shall be analyzed individually (i.e., no compositing). Apparent visually contaminated material within a sampling interval shall be included in the sample portion of the interval to be analyzed. Soil sample locations must also be biased to areas that are discolored or low-lying. To demonstrate a parameter is not present in a sample, analysis results must show a detection limit at least as low as the PQL for that parameter in the third edition of SW-846. For inorganic parameters, the detection limit must be at least as low as the RCRA Groundwater Detection Limits, as referenced in SW-846 (Third Edition) Volume 1A, pages TWO-29 and TWO-30, Table 2-15.

10. In addition to scraping steam cleaning and triple rinsing the concrete pads, all equipment and devices involved in the closure shall be steam cleaned and triple rinsed.

11. Contaminated soil may be excavated and disposed off-site at any time during closure. The goal of any such effort should be to remove all soil which exceeds the established cleanup objectives.

12. If soil excavation is the chosen remedial action for any soil contamination encountered, then soil samples must be collected for analysis from the bottom and sidewalls of the final excavation from which contaminated soil was removed. This sampling analysis effort must be (1) sufficient to demonstrate that the remaining soil meets the established cleanup objectives and (2) carried out in accordance with the following procedures:

    a. A grid system as set forth in Section 13.b of the Agency's closure plan instructions must be established over the excavation.

    b. Samples must be collected from the floor of the excavation at each grid intersection, including intersections along the perimeter of the excavation.

    c. Samples must be collected 6"-12" below the ground surface at each grid intersection around the excavation perimeter. Samples must also be collected at the midpoint of the excavation wall at each grid intersection along the excavation perimeter.

    d. Collection/analysis of all required samples must be in accordance with the procedures approved in this letter.

    e. Soil samples which must be analyzed for volatile organic compounds shall be collected using Attachment 7 of the Agency's RCRA closure plan instructions. In addition, such samples must be collected 6"-12" beneath the floor/sidewalls of the excavation to minimize the possibility of volatilization of the contaminants prior to the collection of the samples.

    f. No random sampling shall be conducted to verify that the cleanup objectives have been met.

13. If soil excavation is the chosen remedial action for any soil contamination encountered, then additional soil must be removed, as necessary, until it can be demonstrated that the remaining soil in and around the area of concern meets the established cleanup objectives. Additional samples must be collected and analyzed in accordance with Condition 12 above from areas where additional soil has been removed.

14. If a decision is made that soil excavation and off-site disposal is not the preferred remedial action for this closure, then the Agency must be notified in writing when such a determination is made. At that time, the Agency will provide Union Pacific Railroad with additional guidance regarding the information which must be submitted to the Agency for review and approval relative to the alternative remedial action which the facility would like to implement.

15. The Agency must be notified in writing if, at any time, it is found that soil contamination above the established cleanup objectives extends to near the water table. This notification must be made within 15 days after such a discovery is made. A plan to investigate for potential groundwater contamination must be submitted to the Agency for review and approval within 60 days after the initial written notification is submitted to the Agency.

16. If groundwater is encountered during the soil sampling activities prior to reaching soil which meets the cleanup objectives, the a plan to investigate for potential groundwater contamination must be submitted to the Agency for review and approval. Such a plan must be submitted within sixty (60) days after the date that the analytical results are received which indicate that soil contamination extends to the water table. In addition, the Agency shall be notified in writing of this discovery within five (5) days after these analytical results are received.

17. If clean closure cannot be achieved pursuant to 35 IAC 725.211 and 725.214, then a modified closure plan and a post-closure plan prepared pursuant to 35 IAC Section 725, Subpart G must be submitted to the Agency for review and approval within 60 days of such a determination.

18. To avoid creating another regulated storage unit during closure, it is recommended that you obtain any necessary permits for waste disposal prior to initiating excavation activities. If it is necessary to store excavated hazardous waste on-site prior to off-site disposal, do so only in containers or tanks for less than ninety (90) days. Do not create regulated waste pile units by storing the excavated hazardous waste in piles. The ninety (90) day accumulation time exemption (35 IAC 722.134) only applies to containers and tanks.

19. Please be advised that the requirements of the Responsible Property Transfer Act (Public Act 85-1228) may apply to your facility due to the management of RCRA hazardous waste. In addition, please be advised tnat

if you store or treat on-site generated hazardous waste in containers or tanks pursuant to 35 IAC 722.134, those units are subject to the closure requirements identified in 35 IAC 722.134(a)(1).

20. All hazardous wastes that result from this project are subject to annual reporting as required in 35 IAC 722.141 and shall be reported to the Agency by March 1 of the following year for wastes treated and left on-site or shipped off-site for storage, treatment and/or disposal during any calendar year. Additional information and appropriate report forms may be obtained from the Agency by contacting:

    Facility Reporting Unit
    Bureau of Land
    Illinois Environmental Protection Agency
    2200 Churchill Road
    P.O. Box 19276
    Springfield, Illinois 62794-9276

21. Collection, preservation, handling, preparation and analysis of all soil samples shall be carried out in accordance with procedures set forth in SW-846. Quality assurance/quality control procedures meeting the requirements of SW-846 must be implemented during all aspects of the required sampling/analysis effort.

Should you have any questions regarding this matter, please contact William T. Sinnott II at 217/524-3300.

Very truly yours,

Lawrence W. Eastep, P.E., Manager
Permit Section
Division of Land Pollution Control
Bureau of Land

LWE:WTS/mls/sp/569Y/1-7

Attachment: Closure Certification Statement

cc: USEPA Region V -- George Hamper

Closure Certification Statement

Closure Log C-699

This statement is to be completed by both the responsible officer and by the registered professional engineer upon completion of closure. Submit one copy of the certification with original signatures and three additional copies.

The hazardous waste management container storage area S01 at the facility described in this document has been closed in accordance with the specifications in the approved closure plan. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

USEPA ID Number

Facility Name

Signature of Owner/Operator Date

Name and Title

Signature of Registered P.E. Date

Name of Registered P.E. and Illinois Registration Number

Mailing Address of P.E.:

Registered P.E.'s Seal:

WTS/mls/514Y/71

7. copies of the final laboratory report sheets, including final sheets reporting all quality assurance/quality assurance dates;

8. visual classification of each soil sample in accordance with ASTM D-2488;

9. a summary of all procedures used for quality assurance/quality control, including the results of these procedures; and

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g. Color photo documentation of closure. Document conditions before, during and after closure.

h. A chronological summary of closure activities and the cost involved.

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18. To avoid creating another regulated storage unit during closure, it is recommended that you obtain any necessary permits for waste disposal prior to initiating excavation activities. If it is necessary to store excavated hazardous waste on-site prior to off-site disposal, do so only in containers or tanks for less than ninety (90) days. Do not create regulated waste pile units by storing the excavated hazardous waste in piles. The ninety (90) day accumulation time exemption (35 IAC 722.134) only applies to containers and tanks.

19. Please be advised that the requirements of the Responsible Property Transfer Act (Public Act 85-1228) may apply to your facility due to the management of RCRA hazardous waste. In addition, please be advised that

if you store or treat on-site generated hazardous waste in containers or tanks pursuant to 35 IAC 722.134, those units are subject to the closure requirements identified in 35 IAC 722.134(a)(1).

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    Illinois Environmental Protection Agency
    2200 Churchill Road
    P.O. Box 19276
    Springfield, Illinois 62794-9276

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Should you have any questions regarding this matter, please contact William T. Sinnott II at 217/524-3300.

Very truly yours,

Lawrence W. Eastep, P.E., Manager
Permit Section
Division of Land Pollution Control
Bureau of Land

LWE:WTS/mls/sp/569Y/1-7

Attachment: Closure Certification Statement

cc: USEPA Region V -- George Hamper

bcc: Bureau File
Collinsville Region
Jim Moore
Bill Sinnott
Amy Dragovich

Closure Certification Statement

Closure Log C-699

This statement is to be completed by both the responsible officer and by the registered professional engineer upon completion of closure. Submit one copy of the certification with original signatures and three additional copies.

The hazardous waste management container storage area S01 at the facility described in this document has been closed in accordance with the specifications in the approved closure plan. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

USEPA ID Number

Facility Name

Signature of Owner/Operator Date

Name and Title

Signature of Registered P.E. Date

Name of Registered P.E. and Illinois Registration Number

Mailing Address of P.E.:

Registered P.E.'s Seal:

WTS/mls/514Y/71

P435100642 File

State of Illinois
ENVIRONMENTAL PROTECTION AGENCY

2200 Churchill Road, Springfield, IL 62794-9276

Mary A. Gade, Director

217/524-3300

A.4.1

June 10, 1993

Jeffrey D. McDermott, P.E.
Union Pacific Railroad Company
Room 930
1416 Dodge Street
Omaha, Nebraska 68179-0930

Re: 1630355007 -- St. Clair County
Union Pacific Railroad Company
ILD984774851
Log No. C-700
Received: April 13, 1993
RCRA Closure

Dear Mr. McDermott:

The closure plan modification request submitted by Union Pacific Railroad Company has been reviewed by this Agency. Your partial closure plan to close the one (1) hazardous waste container (S01) storage area (referred to as the Present Drum Storage Facility at the above-referenced facility is hereby approved subject to the following conditions and modifications:

1. When closure is complete the owner or operator must submit to the Agency certification both by the owner or operator and by an independent registered professional engineer that the facility has been closed in accordance with the specifications in the approved closure plan. This certification must be received at this Agency within sixty (60) days after closure. Union Pacific Railroad must notify the Agency in writing at least thirty (30) days prior to initiating closure activities.

   The attached closure certification form must be used. Signatures must meet the requirements of 35 Ill. Adm. Code Section 702.126. The independent engineer should be present at all critical, major points (activities) during the closure. These might include soil sampling, soil removal, backfilling, final cover placement, etc. The frequency of inspections by the independent engineer must be sufficient to determine the adequacy of each critical activity. Financial assurance must be maintained for the units approved for closure herein until the Agency approves the facility's closure certification.

   The Illinois Professional Engineering Act (Ill. Rev. Stat., Ch. 111, par. 5101 et. seq.) requires that any person who practices professional engineering in the State of Illinois or implies that he (she) is a professional engineer must be registered under the Illinois Professional Engineering Act (par. 5101, Sec. 1). Therefore, any certification or engineering services which are performed for a closure plan in the State of Illinois must be done by an Illinois P.E.

Plans and specifications, designs, drawings, reports, and other documents rendered as professional engineering services, and revisions of the above must be sealed and signed by a professional engineer in accordance with par. 5119, sec. 13.1 of the Illinois Professional Engineering Act.

As part of the closure certification, to document the closure activities at your facility, please submit a Closure Documentation Report which includes:

a. The volume of waste, waste residue and contaminated soil (if any) removed. The term waste includes wastes resulting from decontamination activities.

b. Scaled drawings showing the horizontal and vertical boundaries of the extent of any soil removal effort.

c. A description of the method of waste handling and transport.

d. The waste manifest numbers.

e. Copies of the waste manifests.

f. Information documenting the results of all sampling/analysis efforts. The goal of presenting this information should be to describe, in a logical manner, the activities and results associated with the sampling/analysis effort. At a minimum, this information must include:

1. identification of the reason for the sampling/analysis effort and the goals of the effort;

2. a summary in tabular form of all analytical data, including all quality assurance/quality control data;

3. a scaled drawing showing the horizontal location from which all soil samples were collected;

4. identification of the depth and vertical interval from which each sample was collected;

5. a description of the soil sampling procedures, sample preservation procedures and chain of custody procedures;

6. identification of the test method used and detection limits achieved, including sample preparation, sample dilution (if necessary) and analytical inferences;

7. copies of the final laboratory report sheets, including final sheets reporting all quality assurance/quality assurance dates;

8. visual classification of each soil sample in accordance with ASTM D-2488;

9. a summary of all procedures used for quality assurance/quality control, including the results of these procedures; and

10. a discussion of the data, as it relates to the overall goal of the sampling/analysis effort.

g. A chronological summary of closure activities and the cost involved.

h. Color photo documentation of closure. Document conditions before, during and after closure.

The original and two (2) copies of all certifications, logs, or reports which are required to be submitted to the Agency by the facility should be mailed to the following address:

Illinois Environmental Protection Agency
Bureau of Land -- #33
Permit Section
2200 Churchill Road
Post Office Box 19276
Springfield, Illinois 62794-9276

2. If the Agency determines that implementation of this closure plan fails to satisfy the requirements of 35 Ill. Adm. Code Section 725.211, the Agency reserves the right to amend the closure plan. Revisions of closure plans are subject to the appeal provisions of Section 40 of the Illinois Environmental Protection Act.

3. If contamination is detected, the Agency must be notified in writing within fifteen (15) days. A revised closure plan addressing remediation of the contamination detected must be submitted within timeframes established by the Agency.

4. Under the provisions of 29 CFR 1910 (51 FR 15,654, December 19, 1986), cleanup operations must meet the applicable requirements of OSHA's Hazardous Waste Operations and Emergency Response standard. These requirements include hazard communication, medical surveillance, health and safety programs, air monitoring, decontamination and training. General site workers engaged in activities that expose or potentially expose them to hazardous substances must receive a minimum of 40 hours of safety and health training off site plus a minimum of three days of actual field experience under the direct supervision of a trained experienced supervisor. Managers and supervisors at the cleanup site must have at least an additional eight hours of specialized training on managing hazardous waste operations.

5. The concrete surfaces at Container Storage Areas 1, 2 and 3 shall be visually inspected, photographed and any residue adhering to the surfaces must be removed by scraping and/or brushing. Following this, the concrete surface must be steam cleaned and triple rinsed. Decontamination of these surfaces will be considered complete after they are triple rinsed. All wash and rinse water shall be collected. This water must be analyzed for the characteristics of hazardous waste as set forth in 35 IAC 721, Subpart C. If the wash or rinse water samples exhibit a characteristic of hazardous waste then that material must be managed as a hazardous waste. In any event the material must be managed as a special waste.

   After cleaning the concrete surface, an independent registered professional engineer shall inspect the integrity of the concrete surfaces as it relates to the ability of these surfaces to contain liquid. This surface shall be inspected for cracks which penetrate through the concrete. In addition, all construction joints must be inspected to ensure they are watertight. This inspection should be carried out in accordance with standards and recommendations of professional/technical entities such as the American Concrete Institute, the Portland Cement Association, the American Society for Testing and Materials, the American Society of Civil Engineers, etc. as they relate to the ability of concrete surfaces to contain liquids. The results of this inspection shall be: (1) documented in the form of a report, and (2) certified by an independent Illinois registered professional engineer in accordance with 35 IAC 702.106. A copy of this report must be submitted along with the closure documentation report required by Condition 1 above. The report must include:

   a. The results if the inspection;

   b. Scaled drawings showing the location of all cracks and construction joints observed during the inspection;

   c. Conclusions reached regarding the potential for hazardous wastes and/or hazardous constituents to migrate through any cracks or construction joints observed in the areas of concern;

   d. Justification for the conclusions reached (e.g., information must be provided which indicates that any construction joints in the area of concern are indeed watertight); and

   e. Photographs to support the conclusions reached.

6. If clean closure cannot be achieved pursuant to 35 IAC 725.211 and 725.214, then a modified closure plan and a post-closure plan prepared pursuant to 35 IAC Section 725, Subpart G must be submitted to the Agency for review and approval within 60 days of such a determination.

7. Please be advised that the requirements of the Responsible Property Transfer Act (Public Act 85-1228) may apply to your facility due to the management of RCRA hazardous waste. In addition, please be advised that if you store or treat on-site generated hazardous waste in containers or tanks pursuant to 35 IAC 722.134, those units are subject to the closure requirements identified in 35 IAC 722.134(a)(1).

8. All hazardous wastes that result from this project are subject to annual reporting as required in 35 IAC 722.141 and shall be reported to the Agency by March 1 of the following year for wastes treated and left on-site or shipped off-site for storage, treatment and/or disposal during any calendar year. Additional information and appropriate report forms may be obtained from the Agency by contacting:

    Facility Reporting Unit
    Bureau of Land
    Illinois Environmental Protection Agency
    2200 Churchill Road
    P.O. Box 19276
    Springfield, Illinois 62794-9276

Should you have any questions regarding this matter, please contact William T. Sinnott II at 217/524-3300.

Very truly yours,

Lawrence W. Eastep, P.E., Manager
Permit Section
Division of Land Pollution Control
Bureau of Land

LWE:WTS:sf/sp/359Y,1-5

Attachment: Closure Certification Statement

cc: USEPA, Region V -- George Hamper

bcc: Division File
Collinsville Region
Jim Moore
Bill Sinnott

ATTACHMENT

This statement is to be completed by both the responsible officer and by the registered professional engineer upon completion of closure. Submit one copy of the certification with original signatures and three additional copies.

Closure Certification Statement

Closure Log C-700

The one (1) hazardous waste container storage areas (S01) at the facility described in this document have been closed in accordance with the specifications in the approved closure plan. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

USEPA ID Number

Facility Name

Signature of Owner/Operator Date

Name and Title

Signature of Registered P.E. Date

Name of Registered P.E. and Illinois Registration Number

Mailing Address of P.E.:

Registered P.E.'s Seal:

WTS:sf/sp/359Y,6

cc: Collinsville
V. Wood

JKI

UNION PACIFIC RAILROAD COMPANY

K. R. (KEN) WELCH
Assistant Vice President
Environmental Management

Mailing Address:
Room 930
1416 Dodge Street
Omaha, Nebraska 68179-0930
Fax No. (402) 271-4461

Environmental Control
Dupo, IL

April 9, 1993

Mr. Jim Moore
Illinois EPA - Bureau of Land
Division of Land Pollution Control
2200 Churchill Road
Springfield, IL 62794-9276

Dear Mr. Moore:

Please refer to our meeting held in Ms. Weisenberg's office on February 22, 1993, regarding the temporary storage of drums of pentachlorophenol (PCP) contaminated soil at Dupo, Illinois.

As we discussed at the meeting, the Railroad is to prepare two closure plans for the facility and submit them to IEPA by April 13, 1993. Please find enclosed four copies of the closure plan for the drum storage area used prior to the placement of the drums into the trailers. This plan is titled "Closure Plan, Former Drum Storage Area, Union Pacific Railroad, Dupo, Illinois Rail Yard" and is dated April 7, 1993. Also enclosed are four copies of the second closure plan; which is for the location of the trailers that now contain the drums. This plan is titled "Closure Plan, Present Drum Storage Facility, Union Pacific Railroad, Dupo, Illinois Rail Yard" and is dated April 7, 1993.

Upon approval by IEPA of the closure plan for the Former Drum Storage Area and the completion of the Consent Order, the Railroad will initiate the closure work at Dupo for the Former Area. The second closure plan, which is for the Present Drum Storage Facility, will be implemented upon disposal of the PCP contaminated material at an approved disposal facility.

Please review the enclosed Closure Plans and provide us with your comments and approval. If you have any questions, please contact me at (402) 271-3675. Thank you for your assistance.

Yours truly,

Jeffrey D. McDermott

Jeffrey D. McDermott, P.E.
Mgr. Environmental Site Remediation

ENC-8

C: Mr. Roy Farwell - St. Louis (w/ 2 ENC)
Ms. Janet Yanowitz - USPCI
Ms. Julie Weisenberg - Asst. Attorney General, Springfield
Mr. Chris Cahnovsky - IEPA, Collinsville
Ms. Sue Doubet - IEPA, Springfield
Dr. Dennis Degner - Burns & McDonnell
Mr. Jon Spencer - React
Mr. Charles Northrup - IEPA, Springfield

APPENDIX A

HEALTH AND SAFETY PLAN
UPRR DUPO, ILLINOIS

Health and Safety Plan

Union Pacific Railroad Company
Dupo, Illinois Rail Yard

Drum Handling

Prepared by:

USPCI, Inc.
Consulting Services Division
5665 Flatiron Parkway
Boulder, Colorado 80301

USPCI Project No. 91275
April 7, 1993

1. Introduction

The personal health and safety of all individuals directly involved in the closure of the Present Drum Storage Facility, located at the Union Pacific Railroad (UPRR) Dupo, Illinois rail yard, as well as the general public who may be in the vicinity of the site, is of particular concern to USPCI. Therefore, all prudent and reasonable measures will be taken to establish and maintain safe, healthy working and environmental conditions.

This Health and Safety Plan (HSP) identifies the potential hazards associated with the closure activities and the actions which will be taken to minimize or eliminate those hazards; e.g., engineering controls, use of personal protective equipment (PPE), training, etc. Although efforts were made to develop a plan that is comprehensive and detailed, conditions may change after the project is initiated which warrant modification of this HSP. Throughout each stage of the project, this plan will be reviewed and changed or modified as necessary.

Modification of the HSP will be the responsibility of the USPCI Project Manager, or the designated individual. Changes will be reviewed and approved by a member of USPCI's Health and Safety staff. The activities of all on-site workers will be regulated by this or any modification of this HSP.

This HSP applies only to the UPRR Dupo, Illinois rail yard. The plan has been based upon the data obtained by prior investigations conducted by USPCI and others, and upon information provided by UPRR. Although it is anticipated that this project will not require it, an Emergency Response Plan is provided in this document.

2. Scope of Work

2.1 Client's Business

The UPRR maintains over 23,000 route miles of rail that are used primarily for transportation of various goods.

2.2 History and Location of Site

Since approximately the turn of the century, the site has been used as a railroad yard. During the years of operation, activities such as locomotive fueling, maintenance, and storage of railroad cars and other materials and equipment has taken place at the Dupo, Illinois site.

The work site is located as shown in Figure 1. Plate 1 provides a closer view of the Present Drum Storage Facility and the Former Drum Storage Area. The Former Drum Storage Area was previously used as a temporary storage site for several drums containing liquids and solids contaminated with pentachlorophenol (PCP). The drums have since been moved to the Present Drum Storage Facility. The Present Drum Storage Facility consists of four (4)

HDPE-lined trailers that hold the drums, that are placed on a concrete slab surrounded by a containment berm and fencing.

The Dupo rail yard is flat with sparse vegetation. Access to the site is from East Carondelet Road in Dupo. There are active railroad tracks in the viccinity.

2.3 Time Frame

All work involved in this HSP is anticipated to take less than one week. Field work will be conducted only during daylight hours.

2.4 Personnel/General Scope of Work

Personnel present at the site will be from USPCI, REACT Environmental Engineers, and other subcontracted services or site visitors. REACT Environmental Engineers will serve as a UPRR subcontracted service.

Work will involve moving drums containing the liquids and soils contaminated with PCP. The drums have already been staged on wooden pallets in the trailers according to the material stored (See Figures 2, 3, and 4). All drums will be loaded onto a truck by means of a drum dolly and fork lift for transport to a facility permitted to treat and dispose of PCP. The HDPE liners in each of the trailers will be sampled to determine proper disposal.

All drum handling and sampling will be conducted under the technical supervision of a USPCI employee. The on-site USPCI supervisor will be present at all times during sampling to: 1) provide oversight of the HDPE liner sample collection and drum handling; 2) maintain a continuous log of field activities; 3) document sample collection and drum loading; 4) provide information to the site engineer; and 5) ensure implementation of this USPCI Health and Safety Plan. At least two USPCI employees will perform the drum handling and movement from the trailers to the trucks. USPCI employees will perform the liner sampling and decontamination activities. Subcontracted services and other site visitors will consist of a site engineer.

2.5 Field Tasks/Equipment

The specific field tasks will include:

- Establish Site Control Zones
- Inspect drums and HDPE liners for signs of leakage or damage
- Stage drum according to contents and/or trailer locations
- Review USPCI drum handling procedure
- Collect samples of HDPE liner material
- Decontamination/disposal of equipment and materials
- Document sample collection and drum handling activities

The minimum equipment and tools required are:

- Drum dolly, fork lift, truck
- Knife, or other appropriate liner sampling device
- Barricade tape, hammer
- Sample containers, chain-of-custody records
- Soap and water and other necessary decontamination/disposal materials

3. Potential Hazards

The hazards involved in this project involve both health and physical hazards that would normally accompany any drum handling program. The drum storage trailers are inspected on a weekly basis; organic vapor concentrations have not been detected in the area. In addition, those hazards associated with normal operations of an active rail yard exist.

3.1 Physical/Biological Hazards

- Heavy lifting
- Slips/trips/falls
- Railroad and vehicular traffic
- Dust
- Heat stress

Heat Stress:

Work will be conducted in a humid environment during the summer months. Ambient temperatures are expected to range from 70°F to 90°F during the daylight hours. When ambient temperatures become extreme, workers will be observed by the USPCI supervisor/health and safety designee, and other workers, for signs of heat stress. Individuals exhibiting any signs or experiencing any symptoms of heat stress shall be monitored as follows:

- The victim's pulse will be taken while he/she is lying down (radial pulse);
- The victim's pulse will be taken while he/she is standing (radial pulse);
- If the difference between the horizontal and vertical pulse rates is greater than 20, the victim will be classified as dehydrated and will be instructed to rest for at least one hour in an air-conditioned or shaded environment. He/she will be instructed to consume at least one quart of water during this time;
- Prior to returning to work, the victim's pulse will be checked again to verify that the difference is less than 20;
- Individuals who exhibit symptoms of nausea will be transported to the designated medical facility immediately.

Heat stress includes heat cramps, heat exhaustion, and heat stroke.

3.2 Chemical Hazards

Diesel Fuel:

Diesel fuel saturates areas of the subsurface soils throughout the rail yard. Prolonged skin contact may cause irritation and a rash. Inhalation of excessive vapor concentrations can cause headache, dizziness and nausea. If ingestion occurs and oil is aspirated into the lungs, chemical pneumonia may result. (See attached MSDS.) The flash point of diesel is 175 °F, the LEL is 0.6%, and the TLV is 5 ppm in an oil mist environment. Diesel is incompatible with strong oxidizers.

Pentachlorophenol (PCP):

PCP is the primary contaminant of concern during the soil sampling events. Possible routes of exposures to PCP include skin contact, inhalation, and ingestion. The primary hazard for PCP is dermal contact; liquid PCP is absorbed readily through the skin. Symptoms of exposure include burning/irritation, headaches, nausea/vomiting, coughing, difficulty breathing, dizziness, chest pain, and high fever. PCP is not combustible, has a TWA/TLV of 0.5 mg/m^3 and is incompatible with strong oxidizers. See the attached MSDS for additional information.

4. Engineering Controls

- No smoking will be allowed within the immediate work site. No food will be allowed within 25 feet of the sample area. Decontamination of hands and face will take place prior to consumption of food.
- The job site is a flat low-lying open area; ventilation will not be a problem.
- Access to the sample area will be restricted. Section 7 describes the site access controls.
- The possibility for heat stress will be reduced by taking frequent breaks and drinking liquids as needed.
- Absorbent material will be placed in wet areas to reduce the slip/trip/fall potential.
- Personnel shall avoid the active railroad tracks.

5. Personal Protective Equipment (PPE)

PPE within the immediate work area will be a modified Level "D", consisting of Tyvek or Kleenguard coveralls, hard hats, leather work gloves (drum handling), N-Dex nitrile latex exam gloves, chemical resistant steel toed boots, and safety glasses with side shields.

Workers will have access to full face respirators, and shall don the respirator if windy/dusty conditions are encountered. Respirators shall have GMA-H cartridges in order to be effective on dust with a TWA of 0.05 mg/m^3, as well as organic vapors. Workers moving drums containing liquids will wear splash resistant aprons.

6. Field Monitoring

Field monitoring will consist of visual observation for windy/dusty conditions. MINIRAMs will be used during windy/dusty conditions to continuously monitor particulate concentrations. The area will be watered to control excessive dust. If particulate levels exceed 3 mg/m^3, operations will be suspended.

7. Site Control Measures

Exclusion Zone:

An Exclusion Zone (EZ) will be set up around the work area. Access will be controlled by means of the security fence that surrounds the Present Drum Storage Area. All drum handling and liner removal will take place in this zone. No personnel will be permitted to enter the EZ without providing proof of the following: 1) 40-hour Health and Safety training, 2) medical evaluation and found to be "physically fit" to work at a remediation site, and 3) reading and signature of this Health and Safety Plan. Smoking, drinking, and eating are prohibited in the EZ.

Contaminant Reduction Zone:

The Contaminant Reduction Zone (CRZ) will consist of an accessible area immediately adjacent to the EZ (entrance of the storage area). The CRZ shall have one point of entrance and on point of egress. All personnel leaving the EZ shall complete the appropriate decontamination and disposal of themselves and equipment prior to leaving the CRZ. All sample gloves, coveralls, and other disposable items will be collected in the CRZ for disposal. Smoking, drinking, and eating are prohibited in the CRZ.

Support Zone:

The Support Zone (SZ) will include the vicinity around the EZ and CRZ. Normal work operations including checks of sample labelling, packing, and completion of the chain-of-custody records will be completed in this zone.

8. Decontamination Procedures

Sampling equipment and drum moving equipment will be thoroughly cleaned with soap and water. Rinse water will be collected and field tested for PCP. If detectable levels of PCP exist, the rinse water will be retained at the site and later transported to the Present Drum

Storage Facility at the Dupo rail yard. Heavy equipment, such as forklifts, that are in contact with PCP-contaminated material will be steam cleaned.

Used gloves, coveralls, and other expendable items will be disposed of at the end of the day. Respirators will be washed, if worn. Personnel will be encouraged to maintain good personal hygiene habits.

9. Training

All USPCI personnel, subcontracted individuals, and site visitors will be required to provide proof of 1) current 40-hour Health and Safety training, and 8-hour Annual Refresher if applicable; 2) medical evaluation and found to be "physically fit" to work at a remediation site; and 3) respirator fit testing. The USPCI representative will also have current supervisory training certification. Site specific issues and daily work plans will be discussed on-site at the start of each day.

10. Medical Monitoring

All personnel are required to provide proof of being "physically fit" to work at a remediation site. Workers on site will be observed for signs of exertion, stress and dehydration.

11. Emergency Plan

In the event of an emergency, all personnel involved in the project activities will be required to meet at the field vehicles and follow the USPCI supervisor's directives. An eye wash and a First Aid kit will be located on-site. Should an injury occur, the immediate well-being of the injured party is the prime concern. The emergency numbers and the route to the nearest emergency medical service facility are listed below:

11.1 Emergency Numbers/Contacts

UPRR Client Contact: Jeff McDermott	(402)271-3675
USPCI Project Manager: Janet Yanowitz	(303)938-5533
USPCI Health & Safety: Steve Clegg	(303)938-5500
REACT Environmental Engineers: Dan Barczykowski	(314)569-0991
Fire	911
Ambulance	911
St. Mary's Hospital	(314)274-1905

11.2 Hospital Route

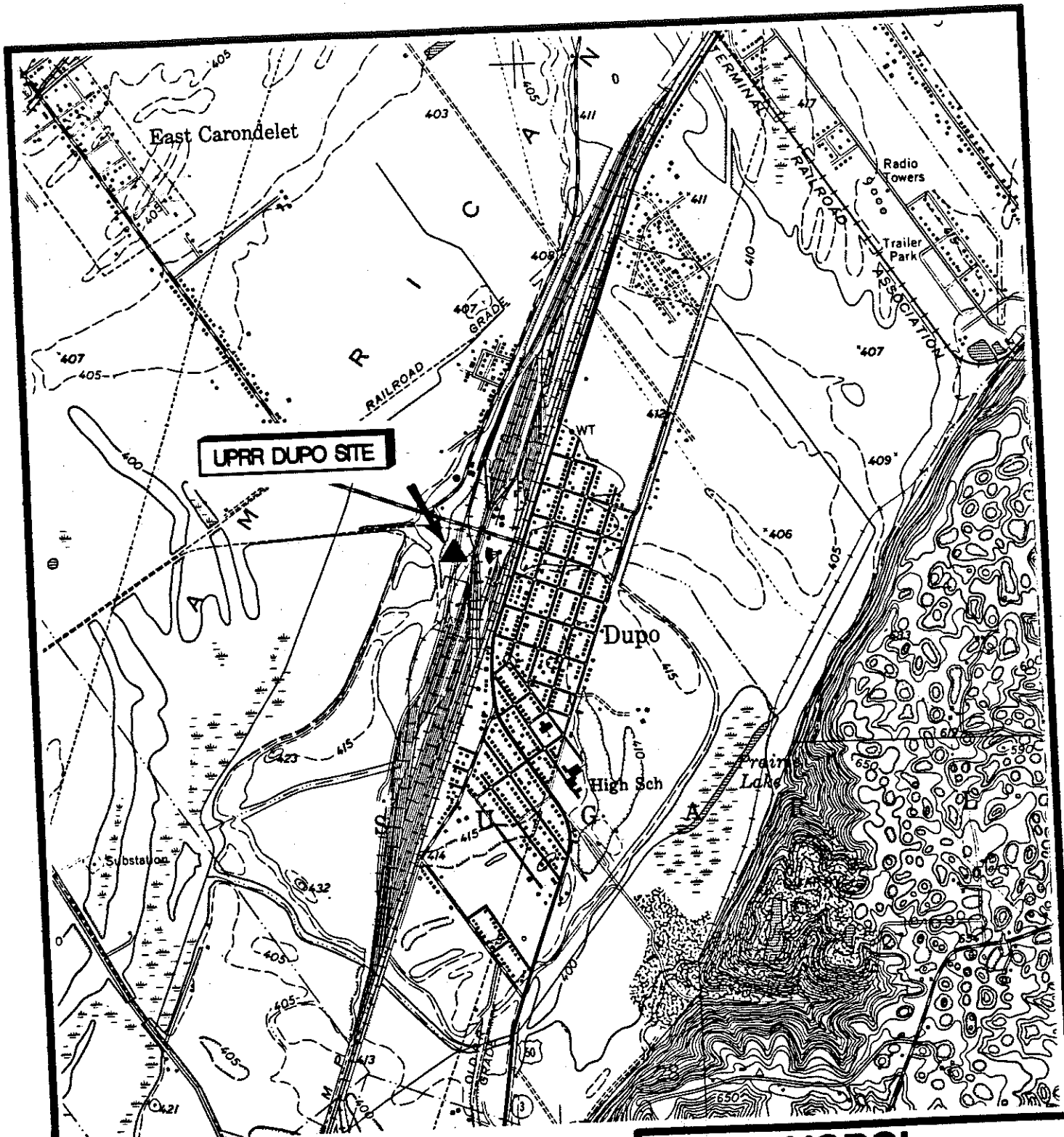
St. Mary's Hospital - 129 N. 8th Street, East St. Louis, IL

Leave site north on Route 3. Approximately 11 miles, go left on 8th Street. Hospital at 129 8th street.

12. Acknowledgement

I acknowledge that I have read and understand the preceding Health and Safety Plan and will abide by the requirements specified in it.

Name	Signature	Date/Time	Company/Organization Representing



USPCI
A Subsidiary of Union Pacific Corporation

DUPO, ILLINOIS

FIGURE 1
SITE LOCATION MAP

SCALE:	DRAWN/DATE	APPROVED
1"=2000' APPROX.	3/93	

MATERIAL SAFETY DATA SHEET

GENIUM PUBLISHING CORPORATION
1145 CATALYN STREET
SCHENECTADY, NY 12303-1836 USA
(518) 377-8855

GENIUM PUBLISHING CORP.

NO. 470

DIESEL FUEL OIL NO. 2-D

Date October 1981

SECTION I. MATERIAL IDENTIFICATION

MATERIAL NAME: DIESEL FUEL OIL NO. 2-D
DESCRIPTION: Mixture of petroleum hydrocarbons; a distillate oil of low sulfur content
OTHER DESIGNATIONS: ASTM D975, CAS # 068 476 346
MANUFACTURER: Available from many suppliers

SECTION II. INGREDIENTS AND HAZARDS

	%	HAZARD DATA
Diesel Fuel Oil No. 2-D		
Complex mixture of paraffinic, olefinic, naphthenic and aromatic hydrocarbons**	>95	8-hr TWA 5mg/m^3* (mineral oil mist)
Sulfur content	<0.5	
Benzene***	<100 ppm	

*Current OSHA standard and ACGIH (1981) TLV
**Diesel fuels tend to be low in aromatics and high in paraffinics. A min. Cetane No. of 40 is required (ASTM D613).
***A low benzene level reduces carcinogenic risk. Fuel oils can be exempted under the benzene standard (29 CFR 1910.1028)

SECTION III. PHYSICAL DATA

Boiling point range, deg F, ------- Ca 340-675 Specific gravity (H_2O=1) ---- <0.86
Solubility in water ---------- negligible Cloud point (wax), deg C --- Ca 0
Viscosity at 40 C, cSt ---------- 1.9-4.1

Appearance and Odor: Clear, bright liquid with a mild petroleum odor.

SECTION IV. FIRE AND EXPLOSION DATA

Flash Point and Method	Autoignition Temp.	Flammability Limits In Air	LOWER	UPPER
125F min (PM)	>500F	% by volume	0.6	7.5

Extinguishing Media: Dry chemical, carbon dioxide, foam, water spray. Use a water spray to cool fire exposed containers. Use a smothering technique for extinguishing fire of this combustible liquid. Do not use a forced water stream directly on oil fire as this will only scatter the fire. Material is a OSHA Class II combustible liquid. Firefighters should wear self-contained breathing apparatus and full protective clothing.

SECTION V. REACTIVITY DATA

This is a stable material in closed containers at room temperature under normal storage and handling conditions. It does not undergo hazardous polymerization.
Incompatible with strong oxidizing agents; heating greatly increases fire hazard.
Thermal -oxidative degradation may yield various hydrocarbons and hydrocarbon derivatives (partial oxidation products), CO_2 and CO and SO_2.

NO. 470

SECTION VI. HEALTH HAZARD INFORMATION

TLV 5 mg/m^3 oil (mist) (See Sect II)

Inhalation of excessive concentrations of vapor or mist can be irritating to the respiratory passages and can cause the following symptoms: headache, dizziness, nausea, vomiting, and loss of coordination. Prolonged or repeated skin contact may cause irritation of the hair follicles and block the sebaceous glands. This produces a rash of acne pimples and spots, usually on the arms and legs. (Good personal hygiene will prevent this).

Chemical pneumonitis may result when ingestion occurs and oil is aspirated in the lungs.

FIRST AID:

Eye Contact: Flush thoroughly with running water for 15 min. including under eyelids.

Skin Contact: Remove contaminated clothing. Wipe excess oil off with a dry cloth. Wash affected area well with soap and water.

Inhalation: Remove to fresh air. Restore and/or support breathing as required.

Ingestion: Do not induce vomiting.

Seek medical assistance for further treatment, observation and support.

SECTION VII. SPILL, LEAK, AND DISPOSAL PROCEDURES

Notify safety personnel of leaks or spills. Remove sources of heat or ignition. Provide adequate ventilation. Clean-up personnel to use protection against liquid contact and vapor or mist inhalation. Contain spill by diking. Small spills can be contained by using absorbants, such as rags, straw, polyurethane foam, activated carbon, and sand. Clean up spills promptly to reduce fire or vapor hazards.

DISPOSAL: May be disposed of by a licensed waste disposal company, or by controlled incineration or burial in an approved landfill.

Follow Federal, State and Local regulations. Report large oil spills.

SECTION VIII. SPECIAL PROTECTION INFORMATION

Provide adequate ventilation where operating conditions (heating or spraying) may create excessive vapors or mists. Use explosion-proof equipment. Provide approved respiratory apparatus for nonroutine or emergency use. Use an approved filter & vapor respirator when vapor/mist concentrations are high. Wear protective rubber gloves and chemical safety glasses where contact with liquid or high mist conc. may occur. Additional suitable protective clothing may be required depending on working conditions. An eye-wash fountain and washing facilities to be readily available near handling and use areas.

Launder soiled or contaminated clothing before reuse (at least weekly laundering of work clothes is recommended).

SECTION IX. SPECIAL PRECAUTIONS AND COMMENTS

Store in closed containers in a cool, dry, well-ventilated area away from sources of open flame, heat, strong oxidizing agents, and ignition. Protect containers from physical damage. Use non sparking tools and explosion-proof electrical equipment. Prevent static electric sparks.

Avoid prolonged skin contact and breathing of vapors or mists.

No smoking in areas of use. Follow good hygienic practice in the use of this material. Do not wear oil contaminated clothing. Do not put oily rags into pockets. Wash exposed skin areas several times a day with soap and warm water when working with this material.

DOT Classification: COMBUSTIBLE LIQUID

DATA SOURCE(S) CODE: 1,6,7,12

APPROVALS: MIS J. M. Nielsen

CRD

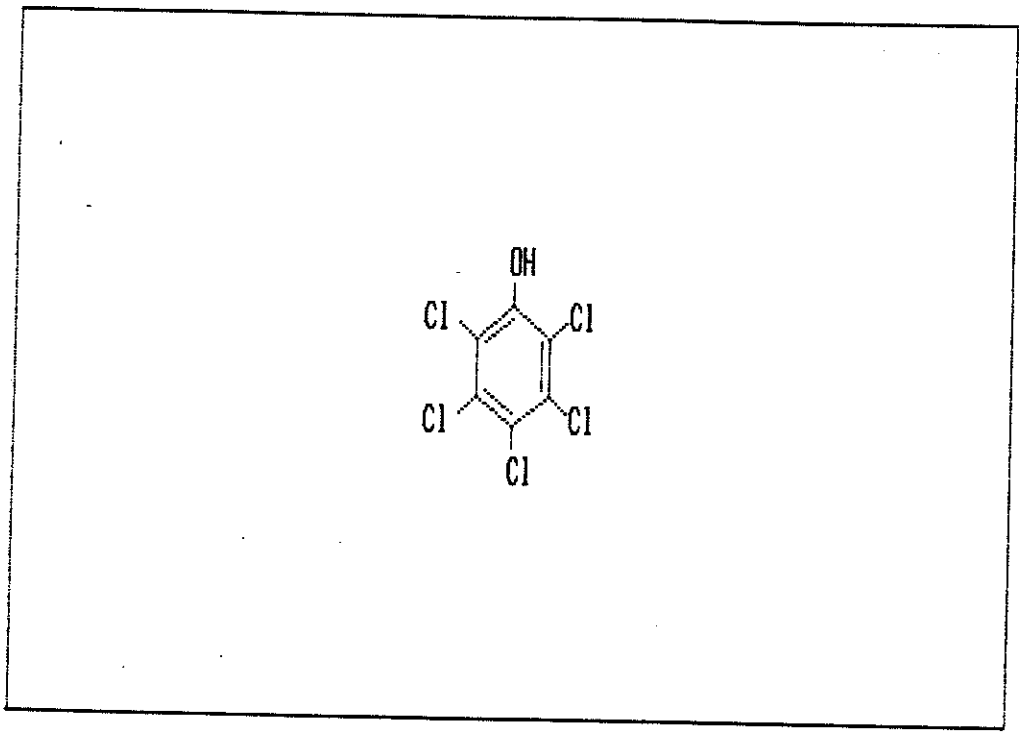
Industrial Hygiene and Safety 10-12-81

MEDICAL REVIEW: 21 October 1981

MATERIAL SAFETY DATA SHEET Valid 8/92-10/92

Sigma-Aldrich Corporation
1001 West Saint Paul Ave. Milwaukee, WI 53233 USA

		Sigma	Aldrich
For Emergency	Contact USA/Canada	800-325-5832	800-231-8327
	Outside USA/Canada	314-771-5765	414-273-3850



IDENTIFICATION

PRODUCT #: P260-4
NAME: PENTACHLOROPHENOL, 99%
CAS #: 87-86-5
MF: C6HCL5O

SYNONYMS

ACUTOX * CHEM-PENTA * CHEM-TOL * CHLOROPHEN * CRYPTOGIL OL * DOWCIDE 7 * DOWICIDE 7 * DOWICIDE EC-7 * DOWICIDE G * DOW PENTACHLOROPHENOL DP-2 ANTIMICROBIAL * DUROTOX * EP 30 * FUNGIFEN * GLAZD PENTA * GRUNDIER ARBEZOL * 1-HYDROXYPENTACHLOROBENZENE * LAUXTOL * LAUXTOL A * LIROPREM * NA 2020 (DOT) * NCI-C54933 * NCI-C55378 * NCI-C56655 * PCP * PENCHLOROL * PENTA * PENTACHLOORFENOL (DUTCH) * PENTACHLOROFENOL * PENTACLOROFENOLO (ITALIAN) * PENTACHLOROPHENATE * PENTACHLOROPHENOL * 2,3,4,5,6-PENTACHLOROPHENOL * PENTACHLOROPHENOL (ACGIH,OSHA) * PENTACHLOROPHENOL, DOWICIDE EC-7 * PENTACHLOROPHENOL, DP-2 * PENTACHLORPHENOL (GERMAN) * PENTACHLOROPHENOL, TECHNICAL * PENTACON * PENTA-KIL * PENTA READY * PENTASOL * PENTA WR * PENWAR * PERATOX * PERMACIDE * PERMAGARD * PERMASAN * PERMATOX DP-2 * PERMATOX PENTA * PERMITE * PREVENOL * PRILTOX * RCRA WASTE NUMBER U242 * SANTOBRITE * SANTOPHEN 20 * SINITUHO * TERM-I-TROL * THOMPSON'S WOOD FIX * WEEDONE * WITOPHEN P *

TOXICITY HAZARDS

RTECS NO: SM6300000
PHENOL, PENTACHLORO-

IRRITATION DATA
SKN-RBT 10 MG/24H OPEN MLD AIHAAP 23,95,62

TOXICITY DATA
ORL-MAN LDLO:401 MG/KG EESADV 1,343,77
ORL-RAT LD50:27 MG/KG JPETAB 76,104,42
IHL-RAT LC50:355 MG/M3 GTPZAB 13(9),58,69
SKN-RAT LD50:96 MG/KG GTPZAB 13(9),58,69
IPR-RAT LD50:56 MG/KG BJPCAL 13,20,58
SCU-RAT LD50:58 MG/KG SRTCAC 36(1-4),10,89
ORL-MUS LD50:117 MG/KG TOLED5 29,39,85
IHL-MUS LC50:225 MG/M3 GTPZAB 13(9),58,69
IPR-MUS LD50:58 MG/KG JTEHD6 10,699,82
UNR-DOG LD50:70 MG/KG PHPHA6 1,3,53
UNR-GPG LD50:100 MG/KG PHPHA6 1,3,53
ORL-HAM LD50:168 MG/KG TXAPA9 48,A192,79
ORL-DCK LD50:380 MG/KG DOEAAH 35,25,79
UNR-FRG LD50:36 MG/KG PHPHA6 1,3,53

REVIEWS, STANDARDS, AND REGULATIONS
ACGIH TLV-TWA 0.5 MG/M3 (SKIN) 85INA8 5,461,86
IARC CANCER REVIEW:HUMAN LIMITED EVIDENCE IMEMDT 41,319,86
IARC CANCER REVIEW:ANIMAL SUFFICIENT EVIDENCE IMEMDT 53,371,91
IARC CANCER REVIEW:ANIMAL INADEQUATE EVIDENCE IMEMDT 20,303,79
IARC CANCER REVIEW:HUMAN INADEQUATE EVIDENCE IMEMDT 53,371,91
IARC CANCER REVIEW:GROUP 2B IMEMDT 53,371,91
EPA FIFRA 1988 PESTICIDE SUBJECT TO REGISTRATION OR RE-REGISTRATION FEREAC 54,22706,89
MSHA STANDARD-AIR:TWA 0.5 MG/M3 (SKIN) DTLVS* 3,198,71
OSHA PEL:8H TWA 0.5 MG/M3 (SKIN) FEREAC 54,2923,89
OSHA PEL FINAL:8H TWA 0.5 MG/M3 (SKIN) FEREAC 54,2923,89
NOHS 1974: HZD 54160; NIS 47; TNF 3548; NOS 42; TNE 29154
NOES 1983: HZD 54160; NIS 29; TNF 2248; NOS 38; TNE 26806; TFE 4191
ATSDR TOXICOLOGY PROFILE (NTIS** PB/90/182163/AS)
EPA GENETOX PROGRAM 1988, POSITIVE: CELL TRANSFORM.-SA7/SHE; S CEREVISIAE GENE CONVERSION
EPA GENETOX PROGRAM 1988, POSITIVE: S CEREVISIAE-FORWARD MUTATION
EPA GENETOX PROGRAM 1988, NEGATIVE: HOST-MEDIATED ASSAY; MOUSE SPOT TEST
EPA GENETOX PROGRAM 1988, NEGATIVE: HISTIDINE REVERSION-AMES TEST; S CEREVISIAE-HOMOZYGOSIS
EPA TSCA CHEMICAL INVENTORY, JUNE 1990
ON EPA IRIS DATABASE
EPA TSCA TEST SUBMISSION (TSCATS) DATA BASE, MARCH 1992
NIOSH ANALYTICAL METHODS: SEE PENTACHLOROPHENOL 5512
NIOSH ANALYTICAL METHODS: SEE PENTACHLOROPHENOL IN BLOOD 8001; IN URINE 8303
NTP CARCINOGENESIS STUDIES (FEED);CLEAR EVIDENCE;MOUSE NTPTR* NTP-TR-349,89
NTP CARCINOGENESIS STUDIES;LABORATORY ASSIGNED, JANUARY 1992
OSHA ANALYTICAL METHOD #39

TARGET ORGAN DATA
PERIPHERAL NERVE AND SENSATION (FLACCID PARALYSIS WITHOUT ANESTHESIA)
BEHAVIORAL (SOMNOLENCE)
BEHAVIORAL (CONVULSIONS OR EFFECT ON SEIZURE THRESHOLD)

BEHAVIORAL (EXCITEMENT)
BEHAVIORAL (CHANGE IN MOTOR ACTIVITY)
BEHAVIORAL (MUSCLE WEAKNESS)
BEHAVIORAL (MUSCLE CONTRACTION OR SPASTICITY)
VASCULAR (BP ELEVATION NOT CHARACTERIZED IN AUTONOMIC SECTION)
LUNGS, THORAX OR RESPIRATION (DYSPNAE)
LUNGS, THORAX OR RESPIRATION (RESPIRATORY STIMULATION)
LUNGS, THORAX OR RESPIRATION (TUMORS)
GASTROINTESTINAL (CHANGES IN STRUCTURE OR FUNCTION OF SALIVARY GLANDS)
LIVER (TUMORS)
KIDNEY, URETER, BLADDER (URINE VOLUME INCREASED)
ENDOCRINE (HYPERGLYCEMIA)
SKIN AND APPENDAGES (SWEATING)
EFFECTS ON EMBRYO OR FETUS (FETOTOXICITY)
EFFECTS ON EMBRYO OR FETUS (FETAL DEATH)
SPECIFIC DEVELOPMENTAL ABNORMALITIES (MUSCULOSKELETAL SYSTEM)
SPECIFIC DEVELOPMENTAL ABNORMALITIES (HOMEOSTASIS)
NUTRITIONAL AND GROSS METABOLIC (BODY TEMPERATURE INCREASE)
TUMORIGENIC (EQUIVOCAL TUMORIGENIC AGENT BY RTECS CRITERIA)
ONLY SELECTED REGISTRY OF TOXIC EFFECTS OF CHEMICAL SUBSTANCES (RTECS)
DATA IS PRESENTED HERE. SEE ACTUAL ENTRY IN RTECS FOR COMPLETE INFORMATION.

---------- HEALTH HAZARD DATA ----------

CUTE EFFECTS

MAY BE FATAL IF INHALED, SWALLOWED, OR ABSORBED THROUGH SKIN.
CAUSES EYE AND SKIN IRRITATION.
MATERIAL IS IRRITATING TO MUCOUS MEMBRANES AND UPPER RESPIRATORY TRACT.
EXPOSURE CAN CAUSE:
CONVULSIONS
DERMATITIS

RONIC EFFECTS

DAMAGE TO THE LIVER
DAMAGE TO THE KIDNEYS
MAY CAUSE CONGENITAL MALFORMATION IN THE FETUS.
CARCINOGEN.
MAY ALTER GENETIC MATERIAL.
TARGET ORGAN(S):
LIVER, KIDNEYS

IRST AID

IN CASE OF CONTACT, IMMEDIATELY FLUSH EYES OR SKIN WITH COPIOUS AMOUNTS OF WATER FOR AT LEAST 15 MINUTES WHILE REMOVING CONTAMINATED CLOTHING AND SHOES.
IF INHALED, REMOVE TO FRESH AIR. IF NOT BREATHING GIVE ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN.
IF SWALLOWED, WASH OUT MOUTH WITH WATER PROVIDED PERSON IS CONSCIOUS.
CALL A PHYSICIAN.
WASH CONTAMINATED CLOTHING BEFORE REUSE.

---------- PHYSICAL DATA ----------

BOILING PT: 310 C
MELTING PT: 188 C TO 191 C
SPECIFIC GRAVITY: 1.978
VAPOR DENSITY: 9.2
VAPOR PRESSURE: 40 MM @ 211.2 C

PEARANCE AND ODOR

OFF-WHITE POWDER

---------- FIRE AND EXPLOSION HAZARD DATA ----------

EXTINGUISHING MEDIA
WATER SPRAY.
CARBON DIOXIDE, DRY CHEMICAL POWDER OR APPROPRIATE FOAM.
SPECIAL FIREFIGHTING PROCEDURES
WEAR SELF-CONTAINED BREATHING APPARATUS AND PROTECTIVE CLOTHING TO PREVENT CONTACT WITH SKIN AND EYES.
UNUSUAL FIRE AND EXPLOSIONS HAZARDS
EMITS TOXIC FUMES UNDER FIRE CONDITIONS.

---------- REACTIVITY DATA ----------

INCOMPATIBILITIES
STRONG OXIDIZING AGENTS
STRONG BASES
ACID CHLORIDES
ACID ANHYDRIDES
HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS
TOXIC FUMES OF:
CARBON MONOXIDE, CARBON DIOXIDE
HYDROGEN CHLORIDE GAS

---------- SPILL OR LEAK PROCEDURES ----------

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED
WEAR SELF-CONTAINED BREATHING APPARATUS, RUBBER BOOTS AND HEAVY RUBBER GLOVES.
SWEEP UP, PLACE IN A BAG AND HOLD FOR WASTE DISPOSAL.
AVOID RAISING DUST.
VENTILATE AREA AND WASH SPILL SITE AFTER MATERIAL PICKUP IS COMPLETE.
WASTE DISPOSAL METHOD
DISSOLVE OR MIX THE MATERIAL WITH A COMBUSTIBLE SOLVENT AND BURN IN A CHEMICAL INCINERATOR EQUIPPED WITH AN AFTERBURNER AND SCRUBBER.
OBSERVE ALL FEDERAL, STATE, AND LOCAL LAWS.

--- PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE ---

WEAR APPROPRIATE NIOSH/MSHA-APPROVED RESPIRATOR, CHEMICAL-RESISTANT GLOVES, SAFETY GOGGLES, OTHER PROTECTIVE CLOTHING.
SAFETY SHOWER AND EYE BATH.
USE ONLY IN A CHEMICAL FUME HOOD.
DO NOT BREATHE DUST.
AVOID CONTACT WITH EYES, SKIN AND CLOTHING.
AVOID PROLONGED OR REPEATED EXPOSURE.
READILY ABSORBED THROUGH SKIN.
WASH THOROUGHLY AFTER HANDLING.
HIGHLY TOXIC.
IRRITANT.
POSSIBLE TERATOGEN.
MUTAGEN.
CARCINOGEN.
KEEP TIGHTLY CLOSED.
STORE IN A COOL DRY PLACE.
LABEL PRECAUTIONARY STATEMENTS
HIGHLY TOXIC (USA DEFINITION)
TOXIC (EUROPEAN DEFINITION)
MAY CAUSE CANCER.
MAY CAUSE HERITABLE GENETIC DAMAGE.
TOXIC BY INHALATION, IN CONTACT WITH SKIN AND IF SWALLOWED.
IRRITATING TO EYES, RESPIRATORY SYSTEM AND SKIN.
POSSIBLE TERATOGEN.
READILY ABSORBED THROUGH SKIN.
TARGET ORGAN(S):

LIVER
KIDNEYS
IF YOU FEEL UNWELL, SEEK MEDICAL ADVICE (SHOW THE LABEL WHERE POSSIBLE).

REGULATORY INFORMATION
THIS PRODUCT IS SUBJECT TO SARA SECTION 313 REPORTING REQUIREMENTS.

--------- ADDITIONAL PRECAUTIONS AND COMMENTS ---------

ADDITIONAL INFORMATION
MAY BE CONTAMINATED WITH A MIXTURE OF POLYCHLOROBENZODIOXINS.

THE ABOVE INFORMATION IS BELIEVED TO BE CORRECT BUT DOES NOT PURPORT TO BE ALL INCLUSIVE AND SHALL BE USED ONLY AS A GUIDE. SIGMA ALDRICH SHALL NOT BE HELD LIABLE FOR ANY DAMAGE RESULTING FROM HANDLING OR FROM CONTACT WITH THE ABOVE PRODUCT. SEE REVERSE SIDE OF INVOICE OR PACKING SLIP FOR ADDITIONAL TERMS AND CONDITIONS OF SALE.

APPENDIX B

PENTACHLOROPHENOL FIELD SCREENING INFORMATION

EnSys RISC® Test System

PENTA in Soil

A FIELD ANALYTICAL TEST FOR PENTACHLOROPHENOL IN SOIL

TEST CHARACTERISTICS

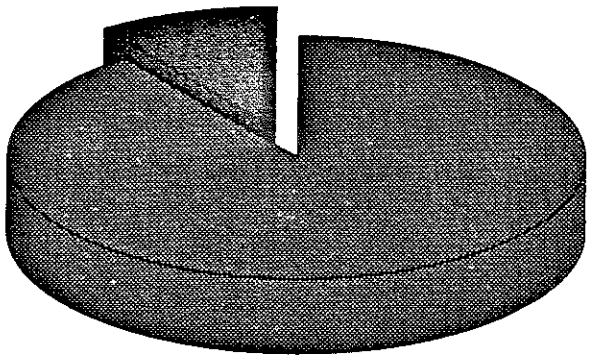
The PENTA RISC® Soil Test is a field-compatible immunoassay-based test for pentachlorophenol in soil. It can be used to measure pentachlorophenol down to 0.5 ppm. For ease of use on-site, the PENTA RISC® Soil Test provides an accurate semi-quantitative (absence/presence) result. The test is designed to provide the absence/presence indication at a set concentration level. The user can test at any pentachlorophenol concentration to suit the actual site action level(s).

The PENTA RISC® Test is specific to pentachlorophenol with very little sensitivity to potential interferents such as chlorinated benzenes, creosote, petroleum hydrocarbons, and chromated copper arsenate.

ACCURACY

The PENTA RISC® Test has been rigorously tested against the standard laboratory methods, SW-846 Method 8270, using actual contaminated samples. It has been shown to correlate extremely well with the laboratory-based GC/MS test for pentachlorophenol. In particular, a very low occurrence rate (<1%) of false negative results has been observed.

< 12% False Positives



> 88% Correlation to Lab Methods

SENSITIVITY

Compound	Minimum Detection Level (ppm)
pentachlorophenol	0.5

ADVANTAGES OF USING THE PENTA RISC® TEST SYSTEM

The PENTA RISC® Test System enables the environmental professional to obtain analytical results in the field at the time of sampling. On-site analytical results eliminate the need to experience the long delays and high prices inherent in laboratory-based instrumental analytical methods. The application of field methods can result in substantial project savings from:

- ❒ Reduced equipment and personnel costs
- ❒ Reduced analytical costs

In fact, overall project quality can be increased by more precisely defining the boundaries of contaminated soil through intelligent sampling and testing in the field using the PENTA RISC® Test System.

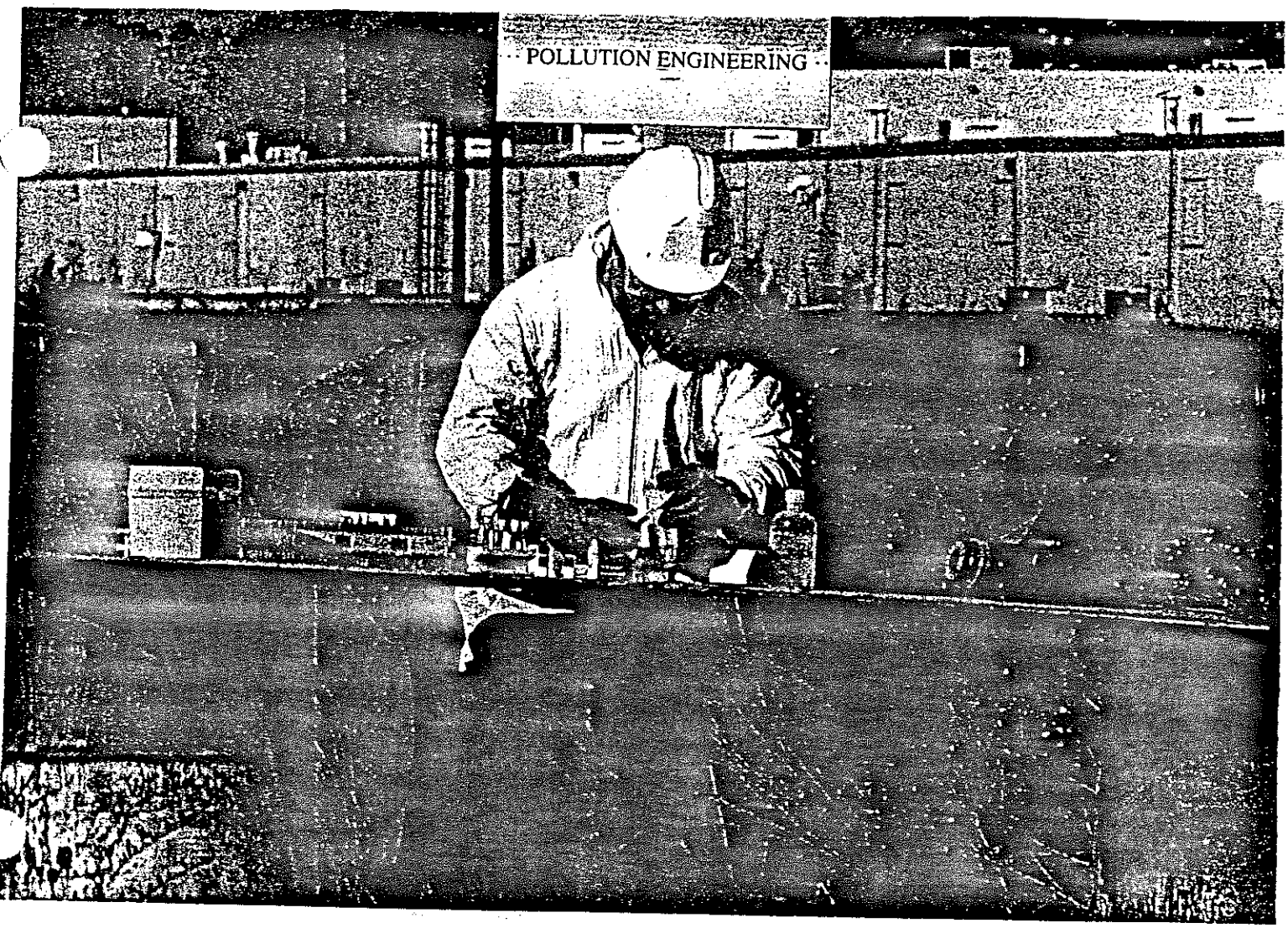
APPLICATIONS

WOOD PRESERVING INDUSTRY	Delineation of soil contamination at plant sites
	Monitoring the progress of soil remediation
	Guiding collection of samples for closure permitting

OPERATIONAL CHARACTERISTICS

Detection Levels	Multiple semi–quantitative levels.
Sample Testing Throughput	Five samples complete in less than 30 minutes
Quality Control	Duplicate standards are provided with each set of samples to ensure accuracy under field conditions
Temperature	Stored at room temperature, no refrigeration necessary.
Shelf Life	3 months (extended with additional real time data.

PO Box 14063, Research Triangle Park, NC 27709
Royal Center, 4222 Emperor Blvd., Morrisville, NC 27560
(919) 941-5509 **(919) 941-5519 FAX**



On-Site Screening Speeds Sample Analysis

Immunoassay offers quick and accurate screening of soil and water samples for organic compounds.

by Kevin R. Carter, Ph.D.

More than $1.5 billion a year is spent on analyzing soil and water samples in order to comply with U.S. Environmental Protection Agency (EPA) wastewater discharge and soil cleanup requirements. This represents more than 10 million samples per year.

Estimates from commercial laboratories and the in-house labs of major waste generating industries indicate at least 50 percent of samples tested are negative or below the threshold for the compound of interest. Is the current practice of costly and time consuming instrument-based laboratory analysis the best means of coping with the steadily increasing demand for analytical results to support regulatory compliance?

Immunoassay technology, which has long been approved by the Food and Drug Administration (FDA) as a standard method for disease detection and drug monitoring, has recently become available as an analytical method to rapidly and accurately screen soil and water samples for several potentially carcinogenic organic compounds.

On-site immunoassay tests for pentachlorophenol (PCP) in soil and water and for polychlorinated biphenyls (PCBs) in soil are currently available. Tests for petroleum hydrocarbons and polyaromatic hydrocarbons are currently under development.

Monitoring programs serve several basic purposes. They provide the waste generating company with a means of monitoring their waste generation, measuring the efficiency of waste removal from discharge streams and adjusting the waste removal process as

• Using a test kit, sample collection and preparation are done on-site. Samples can be analyzed immediately and the results acted on without delay.

necessary, and assuring that discharge permit levels are met. A well-designed monitoring program also provides local, state and federal authorities with the data needed to verify compliance with permits on a routine basis.

The analytical chemistry profession has done such a good job providing sensitive, specific analytical tools and the need for environmental monitoring has increased so rapidly that a crisis, of sorts, has been created.

The laboratory analysis of environmental samples requires three things that are in relatively short supply: technically qualified individuals, capital and time. As a consequence, laboratory analytical results are expensive and normal sample turnaround times are usually two to six weeks. These two factors are responsible for the rapidly increasing application of field screening tests.

On-site testing has several benefits to the waste generator or cleanup contractor. Because samples can be analyzed immediately, the user has rapid access to the data and can act on the results directly, without delay.

In a waste discharge situation, such information could mean the difference between operating within permit levels and out of compliance for as long as six weeks. In a soil remediation project, the use of a field test might enable all the data necessary for site concentration mapping to be obtained in one field sampling trip instead of several. On-site testing also:

- Provides the data necessary to react to contamination that presents an immediate health risk.
- Facilitates the selection of appropriate samples for laboratory analysis.
- Reduces the overall time and cost of analytical work.
- Increases the efficiency of use of the personnel and equipment committed to pollution control.

The same features that motivated widespread adoption of immunoassay technology by the medical community apply to the environmental arena. They include:

- Immunoassay-based tests are extremely specific.
- The tests can detect the major organic compounds of environmental relevance.
- The tests are accurate and precise.
- They are easy to use.
- The immunoassay reaction is rapid, less than 20 minutes.
- The immunoassay reaction is not significantly affected by the composition of the sample, soil or water, or the presence of other compounds.

The technique relies on a molecule referred to as an antibody developed with a high degree of affinity for the target analyte. The high specificity and high affinity of the antibody is coupled with a very sensitive colorimetric reaction that provides the visualization of the result. All of this chemistry is accomplished with a small number of solutions applied to the processed sample or a dilution thereof by means of dropper bottles.

These tests are so simple and so robust they can be performed on the tailgate of a pick-up truck, if necessary. Either soil or water samples can be analyzed using immunoassays. Soil samples require a simple extraction step and subsequent filtration of the extractant, whereas water samples need only pH

A minimally skilled person can be trained to use immunoassay technology in a few hours.

normalization and filtration. A wide range of analyte concentrations in samples is accommodated through conventional serial dilutions. Extraction, normalization and sample dilutions can be preformatted for ease of use in the field.

A minimally skilled individual can be trained in the use of immunoassay technology in a few hours. The use of these tests requires good manual dexterity and the ability to follow written instructions closely.

Case studies

A consulting engineering firm was engaged in an initial site characterization at a former wood preserving plant. The plant had recently ceased operations after 40 years. Several areas on the 50-acre plant grounds were contaminated with PCP, creosote and chromated copper arsenate (CCA).

Because significant levels of dioxin had been detected in association with PCP at this site, the initial characterization was focused on PCP contamination. The on-site screening test performed several functions at this site. At this particular site, it was used to establish a map of the site with respect to PCP contamination. At the outset of the investigation the extent of PCP contamination over the property was unknown.

The rapid testing capability allowed the sampling team to establish the boundaries of PCP contamination in one on-site visit. This provided the project manager with the full contamination profile before he pulled the sampling team out of the field. Using conventional analytical services it would have taken several weeks to get the results, and the sampling team may have had to return to the site to get a more complete picture of PCP contamination had the first round of sampling not been adequate. In addition, the cost of the immunoassay test was less than one-half that of the laboratory analysis.

• Immunoassay tests provide immediate results, whereas conventional analytical services may take several weeks.

Although field screening reduces expense and time to obtain analytical results, many analysis results will still be confirmed using conventional methods to satisfy regulatory requirements or provide QA/QC backup. The use of the screening test on these same samples increased analysis throughput by predetermining the analyte concentration to aid in efficient sample preparation prior to gas chromatography (GC) or gas chromatography/mass spectrometry (GC/MS) analysis.

The use of the field screening immunoassay at this site required a modification from the normal sampling plan. To derive maximum benefit from the screening procedure, the results were plotted on a site map at the end of every day, and the next morning the sampling plan was modified accordingly. For example, where a hot spot was identified, additional samples were taken at greater soil depth to define the extent of soil penetration. In addition, when sample grid cells were found to contain high concentrations of PCP, more samples were taken to further define these areas. In locations where one sample out of several showed an extraordinarily high concentration, the sample was sent to the lab for confirmation.

By sending these and a selection of representative positive and negative samples to the lab for confirmatory analysis, good quality control was maintained, but the cost and time associated with the laboratory analysis of all of the samples was avoided. This procedure allowed areas of high PCP concentration to be more fully delineated and apparent sampling anomalies to be resolved during the initial sampling trip.

On another wood treating site where two PCP spills had occurred over the years, the groundwater was contaminated. The contractor was charged with the task of determining the extent of lateral movement of contaminated groundwater as one of the prerequisites to determining the best treatment approach. Because of the remote location of the site and the consequent cost of bringing in a well drilling rig, the project geologist decided to use the on-site immunoassay to screen groundwater samples for PCP as they were obtained.

This information was subsequently used to direct the movement of the rig on the property so the edge of the contaminant plume was defined in one two-day drilling session. As it turned out, the PCP contamination had moved farther from the spill site than was initially expected. Had the field test not been used, several trips to the site for drilling and sampling would have been necessary, all at additional expense to the client.

Kevin Carter, Ph.D., is a vice president at EnSys Inc., Triangle Park, N.C.

STATE OF ILLINOIS
ENVIRONMENTAL PROTECTION AGENCY

IL 532-0357
ADM 39
054-002

1 of 5

Subject UNION PACIFIC RAIL ROAD
Data RCRA Closure
Reviewed by WILLIAM T SINNOTT II Date 5-27-93

INTRODUCTION TO PROJECT

SUBMITTAL BY NAME : UNION PACIFIC RAIL ROAD (PRESENT)

DATE of SUBMITTAL : APRIL 9, 1993

RECEIVED DATE : APRIL 13, 1993

NAME of FACILITY : UNION PACIFIC RAIL ROAD

FACILITY LOCATION : DUPO, ILLINOIS

SUBMITTED BY : USPCI

WHY SENT IN : THE FACILITY WAS IN VIOLATION OF THE 90 DAY STORAGE LIMIT

1) IS IT A FIRST SUBMITTAL : YES

2) IS IT A MODIFICATION TO A PREVIOUS SUBMITTAL : NO

3) WHAT HWMU'S ARE BEING ADDRESSED BY THIS Closure Pl
(SOI

STATE OF ILLINOIS
ENVIRONMENTAL PROTECTION AGENCY

IL 532-0357
ADM 39
054-002

2 of

Subject UNION PACIFIC RR Log # 700

Data

Reviewed by William T Sinnott II Date 5-27-93

REVIEW of FILES / PERTINENT SITE HISTORY

THE MOST PERTINENT SITE HISTORY IS THE CLEANUP of A SPILL & SUBSEQUENT STORAGE (DRUMS) GREATER THAN THE ALLOWABE 90 DAY LIMIT. THIS UNIT IS UNDERGOING RCRA CLOSURE. THE REASON THAT THE FACILITY HAS STORED HAZARDOUS WASTE GREATER THAN 90 DAYS IN TWO (2) DIFFERENT (SOI) UNITS IS due to the FACT THAT NO ONE IN THE COUNTRY IS LICENSED TO ACCEPT THIS WASTE. THIS UNIT UNDERGOING RCRA CLOSURE IS A TRAILER STORING THE DRUMS. THIS UNIT IS A SAFER UNIT THAN THAN THE FORMER UNIT WHICH HOUSED THE DRUMS of the WASTE. THE PREVIOUS UNIT WAS OUTSIDE ON THE GROUND.

NOTE: THE DIVISION FILE IS VERY SMALL FOR THIS FACILITY

STATE OF ILLINOIS
ENVIRONMENTAL PROTECTION AGENCY

IL 532-0357
ADM 39
054-002

3 of

Subject UNION PACIFIC RAIL ROAD

Data

Reviewed by WILLIAM T SINNOTT II Date 5-28-93

FINAL ACTION

IT IS MY PROFESSIONAL OPION THAT THIS CLOSURE PLAN SHOULD BE APPROVED.

DISCUSSION of FINAL ACTION

ITEM (1) GIVES THEM TIME GUIDELINES

ITEM (2) SECTION 40 of THE ENVIRONMENTAL PROTECTION ACT

ITEM (3) 15 DAYS if FIND CONTAMINATION

ITEM (4) HAZWOPER STANDARD

ITEM (5) ANALYZE for 8270, SOIL SAMPLES

ITEM (6) CLEAN UP Objectives

ITEM (7) ESTABLISH CLEAN-UP-OBJECTIVES

ITEM (8) DETERMINE Hz & Vt. EXTENT of CONTAMINATION

ITEM (9) ATTACHMENT 7 ??

ITEM (10) STEAM CLEAN & TRIPLE RINSE EVERYTHING

ITEM (11) REMOVE CONTAMINATED SOIL AT ANY TIME

ITEM (12) HOW TO PERFORM FINAL EXCAVATION

ITEM (13) SOIL EXCAVATION ⇒ MUST MEET CUO's

STATE OF ILLINOIS
ENVIRONMENTAL PROTECTION AGENCY

IL 532-0357
ADM 39
054-002

4 of 4

Subject UNION PACIFIC RAIL ROAD

Data

Reviewed by WILLIAM T SINNOTT II Date 5-27-93

DISCUSSION of FINAL ACTION CONTINUED

(14) if NOT EXCAVATING NOTIFY US

(15) SOIL CONTAMINATION EXTENDS TO WATER TABLE

(16) GROUNDWATER before MEET CLEAN-UP-OBJECTIVES

(17) POST CLOSURE CARE IN LIEU of CLEAN CLOSURE

(18) DON'T MAKE A WASTE PILE

(19) ~~BRS~~ RESPONSIBLE PROPERTY TRANSFER ACT

(20) FACILITY REPORTING UNIT

#136

BUREAU OF LAND
CLEANUP OBJECTIVES INFORMATION

__X__ OCS RECOMMENDATION REQUESTED

__X__ CORE REVIEW REQUESTED

RECEIVED
MAY 14 1993
IEPA
Office of Chemical Safety

PART A. GENERAL INFORMATION

Re: 1630355007 -- St. Clair County
Dupo/Union Pacific Railroad
ILD984774851
RCRA Closure

PROJECT MANAGER (NAME): William T. Sinnott II PHONE: 524-3310

DATE SUBMITTED: May 7, 1993 DUE DATE: June 12, 1993

ENVIRONMENTAL MEDIA INVOLVED: __X__ SOIL _____ SURFACE WATER _____ GROUNDWATER
_____ SEDIMENTS

BRIEF HISTORY OF CHEMICALS/ACTIVITIES AT THIS SITE: Several drums of pentachlorphenol were involved in a fire. Residue from this fire was dug up and placed in drums. Initially, the drums were stored in a gravel area at the subject facility and are now inside a trailer.

GROUNDWATER CLASSIFICATION: __X__ CLASS 1 _____ CLASS 3
_____ CLASS 2 _____ CLASS 4

BASIS FOR GROUNDWATER CLASSIFICATION (provide attachments as necessary):

Class I chosen because no information provided to indicate otherwise

MANAGER CONCURRENCE

Name Lawrence W. Eastep Signature Lawrence W. Eastep by dlm

PART B. DOCUMENTATION OF OCS RECOMMENDATION

OCS REVIEWER: Name Tracey Virgin Signature

DATE OF OCS RECOMMENDATION: 6/30/93

ADDITIONAL OCS COMMENTS: Project manager states that industries are located to the west of the site and residences, agricultural areas to the east. OCS has determ the land use to be agricultura

_____ MIXTURE OBJECTIVES _____ DEGRADATION PRODUCT OBJECTIVES

__X__ CORE REVIEW REQUESTED _____ OTHER

RECEIVED
JUL 01 1993
IEPA - BOL
PERMIT SECTION

BUREAU OF LAND
CLEANUP OBJECTIVES INFORMATION

PART C SOIL OBJECTIVES (MG/KG)

INSERT (B)

PARAMETER	TYPE A	BASIS	ADL
2,4,6-Trichlorophenol (ADL)	0.0064	35 IAC 620 Subpart F	0.430
2,4,5-Trichlorophenol	0.7	35 IAC 620. Subpart F	0.660
2,3,4,6-Tetrachlorophenol	0.21	35 IAC 620. Subpart F	N.A
Pentachlorophenol	0.02	35 IAC 620.410	
$^{13}C_{12}$-OCDD			
2,3,7,8-TCDD			
1,2,3,4-TCDD			
1,3,6,8-TCDD			
1,3,7,9-TCDD			
1,3,7,8-TCDD			
1,2,7,8-TCDD			
1,2,8,9-TCDD			
1,2,8,9-TCDD			
1,2,3,4,7-PeCDD			
1,2,3,7,8-PeCDD			
1,2,3,4,7,8-HxCDD			
1,2,3,4,6,7,8-HpCDD			
Octachlorodibenzo-p-dioxin			
1,2,7,8-TCDF			
1,2,3,7,8-PeCDF			
1,2,3,4,7,8-HxCDF			
1,2,3,4,6,7,8-Heptachlorodibenzo-furan			
~~Octachlorodibenzofuran~~ (2)(3)0			
Chlorinated dioxins and furans	0.0006	USDPH/CDC Recommendation	NA

NOTES
Tetra-chlorodibenzo-p-dioxin (TCDD)
Penta-chlorodibenzo-p-dioxin (PCDD)
Hexchlorodibenzo-p-dioxin (HxCDD)
Heptachlorodibenzo-p-dioxin (HpCDD)
Tetrachlorodibenzofuran (TCDF)
Pentachlorodibenzofuran (PCDF)
Hexachlorodibenxofurans (HxCDF)

USE ONLY ~~ON~~ ONES WITH NUMBERS

SITE NAME: Union Pacific Railroad
SITE ID NO.: 1630355007

OCS REVIEWER INITIALS: ____

WTS/mls/402Y/1-2

!NOTE TO USER -- THESE VARIABLES CAN BE DIRECTLY INCORPORATED INTO THE TEXT OF DOC. 0068A, P. 78, IN THE PARTS ENTITLED "GROUNDWATER STANDARDS," "GROUNDWATER OBJECTIVES" AND/OR "SOIL OBJECTIVES"

!VAR. 1
ADL: Acceptable Detection Limit; lowest Practical Quantitation Limit (PQL) from SW846.

!VAR. 2
NA: Not Available.

!VAR. 3
ND: Not Determined, insufficient data available upon which to base cleanup objective. If chemical(s) is/are still detected after all other cleanup objectives have been achieved then OCS should be consulted to further address appropriate cleanup objectives at that time.

!VAR. 4
35 IAC 620.410 & 620.420: Title 35: Environmental Protection
Subtitle F: Public Water Supplies
Subpart D: Groundwater Quality Standards
Section 620.410 & Section 620.420

!VAR. 5
35 IAC 620. Subpart F: Title 35: Environmental Protection
Subtitle F: Public Water Supplies
Subpart F: Health Advisories

!VAR. 6
MCL: Maximum Contaminant Level, USEPA 57 FR No. 138:31776.

!VAR. 7
TCLP: Toxicity Characteristic Leaching Procedure.

!VAR. 8
(!VARIABLE!_____): Chemical not detected, but expected to be present.

!VAR. 9
Mixture !VARIABLE! _____: In addition to meeting the individual Class I groundwater recommendations indicated in the above tables, the following equation must be satisfied in order to protect against liver tumors.
!NOTE TO USER: AN EQUATION SHOULD BE INSERTED HERE!!VARIABLE!

!VAR. 10
Mixture !VARIABLE! _____: In addition to meeting the individual Class I groundwater recommendations indicated in the above tables, the following equation must be satisfied in order to protect against liver toxicity.
!NOTE TO USER: AN EQUATION SHOULD BE INSERTED HERE!!VARIABLE!

!VAR. 11
Mixture !VARIABLE! _____: In addition to meeting the individual Class I groundwater objectives indicated in the above tables, the following equation must be satisfied to protect against liver, kidney, and blood toxicity.

$$\frac{\text{(acenaphthene)}}{0.42\ \text{mg/l}} + \frac{\text{(fluoranthene)}}{0.28\ \text{mg/l}} + \frac{\text{(fluorene)}}{0.28\ \text{mg/l}} + \frac{\text{(pyrene)}}{0.21\ \text{mg/l}} \leq 1.0$$

!VAR.12
(!VARIABLE!_____) TSCA Policy: TSCA PCB Cleanup Policy, 40 CFR Part 761. The objectives for PCBs in soil are based on current and future use of the site. If the site is considered restricted access and will remain as such in the future, the cleanup objective for PCBs is 25 mg/kg (40 CFR 761.125). If the site is presently nonrestricted or will be used as nonrestricted commercial or residential areas in the future, the cleanup objective is 10 mg/kg provided that the soil is covered with a minimum of 10 inches of clean soil, i.e., containing less than 1 mg/kg of PCBs (40 CFR 761.130).

!VAR. 13
(!VARIABLE! _____): Because !VARIABLE! _____ is regarded as a carcinogen, Subpart F procedures direct that the groundwater limit be set at its level of detection. However, no approved SW-846 analytical method is available from which to obtain a practical quantitation limit (PQL). !VARIABLE! _____ is requested to identify the analytical method with the lowest detection of those available, to utilize this limit as its cleanup objective, and to submit documentation of this procedure to the Agency for review.

!VAR. 14
(!VARIABLE!) Footnote 1: The Agency encourages !VARIABLE! Union Pacific to explore analytical procedures that will show cleanup to be well below the detection limit (!VARIABLE! 6.430 ppm) and closer to the actual soil cleanup objective.

!VAR. 15
(!VARIABLE! _____): The objective for mineral spirits is based on the sum of the detection limits for the individual constituents.

!INITIALS! TRP

JM:lat/sp/373Y,1-7

Union Pacific Railroad
30355007
Pg 4

!VAR.12
(!VARIABLE!_____) TSCA Policy: TSCA PCB Cleanup Policy, 40 CFR Part 761. The objectives for PCBs in soil are based on current and future use of the site. If the site is considered restricted access and will remain as such in the future, the cleanup objective for PCBs is 25 mg/kg (40 CFR 761.125). If the site is presently nonrestricted or will be used as nonrestricted commercial or residential areas in the future, the cleanup objective is 10 mg/kg provided that the soil is covered with a minimum of 10 inches of clean soil, i.e., containing less than 1 mg/kg of PCBs (40 CFR 761.130).

(!VARIABLE!_2_) Historically, U.S. EPA has utilized three risk-based concentrations for soils contaminated with 2,3,7,8-tetrachlorodibenzodioxin. These include:

5-15 ppb in industrial settings
1.0 ppb in residential settings
0.006 ppb in agricultural areas

OCS has determined that the (!VARIABLE!_agricultural_) recommendation describes land use at this site. It is OCS's intent that the objective is met if the total of the factored chlorinated dioxin and furan concentrations are under the objective. The factoring process and factor values are presented in EPA\625\3-89\016, Interim Procedures for Estimating Risks Associated with Exposure to Mixtures of Chlorinated Dibenzodioxins (1989 Update).

(!VARIABLE!_3_) United States Department of Public Health/Center for Disease Control, Atlanta, Georgia. CDC concluded that 2,3,7,8-TCDD soil concentrations above 1.0 ppb in residential areas raise concerns about health risks.

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Tech

Attachment 3
For IEPA Use Only
Revised 3/2/89

CLOSURE PLAN REVIEW NOTES AND CHECKLIST
SECTION A: REVIEW NOTES
(attach notes or references as necessary)

Facility Name: UNION PACIFIC RAILROAD (PRESENT) Log No.: 700

Location (County, Municipality, Township, Range, Section): ST CLAIR COUNTY SECTION 21 T1N R10W

State ID: 1630355007 U.S. EPA ID: ILD984774851

1st Submittal: APRIL 13, 1993 Reviewer: WILLIAM TSIMONIDIS Mailed: _____

2nd Submittal: _____ Reviewer: _____ Mailed: _____

Regulated Units at the Facility and Their Capacities

Unit	Approved Part A	HWDMS	Closure Plan	Units Closing	Units Remaining Open
S01	114 DRUMS				
			FRONT & BACK		

_____ Partial Closure or X Final (full) Closure

X Proposed "Clean" Closure or _____ "Dirty" Closure

Status of Facility after Closure: NOT TSD

Are any new treatment processes proposed to minimize or render nonhazardous, hazardous waste? NO Explain: _____

Will a change in the Part A be necessary if the closure is approved? DON'T HAVE P -T

Is the facility requesting additional time to start or complete closure than allowed? _____ Explain: _____

Size or area of each unit closing: 62'x62

Identify wastes managed in each unit (include hazardous waste codes):

PENTACHLORO PHENOL - F027

Volume of wastes disposed of, or located in, units at the facility: _____

114 DRUMS of F027

Sampling grid spacing _____ Satisfactory? _____

Total number of samples from unit = _____

Were background samples taken from proper soil horizon? _____

Total number of background samples (minimum of 10 per strata) = _____

Submitted to COT on _____ (date)

Recommendations from COT dated _____

Reviewed by CROPA on _____ (date)

CROPA memo dated _____

Identify soil and/or groundwater clean-up levels. (Give basis, i.e., closure plan, COT/CROPA recommendation, PQL, etc.)

Is the portion of the sample to be tested appropriate? N/A

Approximate volume of waste to be removed: N/A (yds. or gallons)

Approximate volume of underlying and surrounding soil and liner to be removed: N/A

How is site to be capped or otherwise restored? N/A

Are there any non-RCRA Solid Waste Management Units? ____ Explain: HAVE YET TO SEE SWMU CERTIFICATION

Have there been any releases from the SWMUs?

Explain: HAVE YET TO SEE SWMU CERTIFICATION

How is the groundwater to be addressed for the closing unit? IT IS NOT BEING ADDRESSED

Is groundwater monitored? No

Is groundwater contaminated? ~~Don't~~ IT MAY BE

What is the facility's Subpart F compliance status? _____

If the facility is in assessment, will the assessment be completed prior to final closure? NOT IN ASSESSMENT

Is additional groundwater monitoring warranted in closure plan? NO

Explain: _____

_____

Is groundwater monitoring warranted after closure? NO Explain: _____

_____

_____

_____

Is the facility being referred to USEPA for corrective action? _____

If so, indicate the type of enforcement: 3013 Order _____

3008(h) Order _____

3005(c) Action _____

Final Action: Approve X, Disapprove _____, Modify _____

Schedule for closure: Date of Plan Approval: _____

Start closure: _____

Complete closure: _____

Certification due to IEPA: _____

THEY HAVE BEEN REFERRED TO A.G.'S OFFICE

SECTION B: CLOSURE PLAN CHECKLIST

LEGEND

PR: Provided

AD: Adequate

NA: Not Applicable

Note: Respond to questions with Y for yes and N for no

1. Description of hazardous waste operation and proposed closure (725.212(a) and (b))

PR	AD	NA		
Y	Y	—	a.	description provided of hazardous waste operations
Y	Y	—	b.	description provided for all hazardous waste units at the facility
Y	Y	—	c.	identification of units closing
Y	Y	—	d.	identification of units remaining open
Y	Y	—	e.	maximum inventory of wastes at any time during life of facility (should correspond to Part A volumes)
Y	Y	—	f.	description of steps to be taken for decontamination of facility equipment (725.212(b)(4))
N	N	—	g.	expected year of closure for all units at the facility (725.212(b)(1))
Y	Y	—	h.	schedule of closure for all units (725.212(b)(6) and (b)(7))
—	—	N/A	i.	plan submitted 180 days prior to initiation of closure (725.212(d)(1))
Y	Y	—	j.	all hazardous wastes and hazardous constituents properly identified
N	N	—	k.	groundwater/surface water use in the area identified

2. Public Involvement (725.212(d)(4))

N	N	—	a.	newspaper notice posted
—	—	—	b.	public hearing requested?
—	—	—	c.	public hearing granted?
—	—	—	d.	notice of public hearing 30 days prior to hearing

3. Closure time limits (725.213)

N	N	—	a.	90-day limit for treatment, removal or disposal of hazardous wastes
Y	Y	—	b.	180-day limit for completion of closure activities
—	—	N/A	c.	extension of time limits
—	—	N/A	d.	justification provided for extension of time limits?

4. Disposal or decontamination of equipment (725.214)

PR	AD	NA		
Y	Y	—	a.	proper disposal of facility equipment and structures, or
Y	Y	—	b.	decontamination - removal of all hazardous wastes and residues
Y	Y	—	c.	decontamination of equipment used for cleanup
Y	Y	—	d.	decontamination method
Y	Y	—	e.	RCRA wastes and residues to be handled and disposed as hazardous waste

5. Certification of closure (725.215, 725.216 and 725.219)

N	N	—	a.	provision for certification by owner or operator within 60 days following closure
Y	Y	—	b.	provision for certification by independent registered Professional Engineer that facility was closed in accordance with the approved closure plan
Y	Y	—	c.	provision for Closure Documentation Report to document closure activities
—	—	N/A	d.	survey plat and notification in deed to Agency and appropriate local government office
—	—	N/A	e.	certification to Agency that notification in deed has been made (725.219(b)(2))

6. Post-Closure Care Plan required? (725.217)

—	—	—	Disposal units closing after 1/26/83 are required to obtain a Post-Closure Permit. Advise facility that a PCC Plan will be called in at a later date.

7. Closure of container storage area (S01).

			a.	soil sampling plan
—	—	—		grid spacing
—	—	—		adjacent areas to be sampled for spills and/or windblown particulates
			b.	soil analysis plan
—	—	—		includes all hazardous constituents
—	—	—		detection limits
—	—	—		sampling increments and total depth of sampling
—	—	—		sample handling and analysis (40 CFR 261, App. III; SW-846; Attachment 7 of this document)
—	—	—	c.	removal of contaminated soil
—	—	—	d.	cleanup standard
—	—	—	e.	post-closure care in lieu of clean closure
Y	Y	—	f.	decontamination of facility
Y	Y	—	g.	decontamination of equipment
Y	Y	—	h.	disposal of cleaning waste and residue

PR	AD	NA		
~~X~~	~~X~~	—	i.	scale drawing of storage area
~~X~~	~~X~~	—	j.	surface description (asphalt, concrete, aggregate, soil)
~~X~~	~~X~~	—	k.	structural integrity and containment devices (cracks, joints, deterioration, curbs, roof)

8. Closure of <u>tank storage or treatment units</u> (S02, T01 -- 725.297)

N/A

—	—	—	a.	scale drawing of storage area, including secondary containment structures, sumps and drainage pathways
—	—	—	b.	description of materials used to construct tanks, ancillary equipment and secondary containment structures
—	—	—	c.	present condition of tanks, ancillary equipment and secondary containment structures (i.e., structural integrity and surface condition)
			d.	removal of all hazardous wastes and residues from:
—	—	—		tanks
—	—	—		pipes and discharge control equipment
—	—	—		discharge confinement structures
—	—	—	e.	decontamination of equipment
—	—	—	f.	soil testing beneath and around tank, including secondary containment areas, to verify that no spills or leaks have occurred
—	—	—		includes all hazardous constituents
—	—	—		detection limits
—	—	—		sampling increments and total depth of sampling
—	—	—		sample handling and analysis (40 CFR 261, App. III; SW-846; Attachment 7 of this document)
—	—	—	g.	cleanup standard
—	—	—	h.	removal of contaminated soil
—	—	—	i.	removal of tank (required by State Fire Marshall for underground tanks which contained flammable materials)

9. Closure and post-closure for <u>surface impoundments</u> (S04, D83, T02 - 725.328)

N/A

—	—	—	a.	removal of standing liquids
—	—	—	b.	removal of wastes and waste residues
—	—	—	c.	removal of liner
—	—	—	d.	removal of underlying and surrounding contaminated soil
—	—	—	e.	cleanup standard
—	—	—	f.	management of removed material as hazardous waste unless determined to be nonhazardous under 721.103(c)
—	—	—	g.	post-closure care in lieu of material removal (725.328(c)) (40 CFR 265.228(a)(2), March 19, 1987)
—	—	—	h.	dewatering, stabilization or other treatment of remaining wastes to provide cover support and/or render waste nonhazardous (40 CFR 265.228(a)(2), March 19, 1987)
—	—	—	i.	request for modification of Part A to include T02 if stabilization or treatment is proposed

PR	AD	NA		
			j.	modification of post-closure requirements due to mitigating factors (725.217(d))
			k.	soil sampling plan
—	—	—		grid spacing
—	—	—		adjacent areas to be sampled for spills and/or windblown particulates
			l.	soil analysis plan
—	—	—		includes all hazardous constituents
—	—	—		detection limits
—	—	—		sample handling and analysis (40 CFR 261, App. III; SW-846; Attachment 7 of this document)
—	—	—	m.	groundwater monitoring provided to verify clean closure (724 or 725, Subpart F)

10. Closure and post-closure of <u>waste piles</u> (S03 725.358)

—	—	—	a.	removal or decontamination of all waste residues
			b.	removal or decontamination of contaminated:
—	—	—		liners
—	—	—		subsoils
—	—	—		structures and equipment (contaminated with leachate or waste)
—	—	—	c.	management of removed materials as hazardous waste unless determined to be nonhazardous according to 721.103(c) & (d)
—	—	—	d.	post-closure care provided in accordance with 725.410 if all contaminated subsoils can't be removed or decontaminated
			e.	soil sampling plan
—	—	—		grid spacing
—	—	—		adjacent areas to be sampled for spills, tracking and/or windblown particulates
			f.	soil analysis plan
—	—	—		includes all hazardous constituents
—	—	—		detection limits
—	—	—		sampling increments and total depth of sampling
—	—	—		sample handling and analysis (40 CFR 261, App. III; SW-846; Appendix 7 of this document)

11. Closure and post-closure care objectives for <u>land treatment</u> (D81 725.380(a))

—	—	—	a.	control mitigation of hazardous wastes and hazardous waste constituents into the groundwater
—	—	—	b.	control release of contaminated run-off into surface water
—	—	—	c.	control release of airborne particulate contaminants
—	—	—	d.	compliance with food chain crop requirements (725.376)

N/A

12. Considerations to be addressed in land treatment closure and post-closure plans (725.380(b))

SOI UNIT ONLY

PR	AD	NA		
—	—	—	a.	type and amount of hazardous wastes and Appendix H hazardous constituents which are contained in the waste
—	—	—	b.	mobility of hazardous wastes and constituents
—	—	—	c.	site location, topography and surrounding land use and the related potential effects of pollutant migration
—	—	—	d.	climate (net precipitation)
—	—	—	e.	soil profile and soil properties
—	—	—	f.	geologic profile
—	—	—	g.	surface and subsurface hydrology
—	—	—	h.	unsaturated zone monitoring information (725.378)
—	—	—	i.	type, concentration and depth of hazardous waste migration
—	—	—	j.	removal of contaminated soils
—	—	—	k.	cleanup standards
—	—	—	l.	function of final cover
—	—	—	m.	engineering characteristics of final cover
—	—	—	n.	groundwater monitoring

N/A

13. Requirements during land treatment closure period (725.380(d))

SOI UNIT ONLY

—	—	—	a.	unsaturated zone monitoring
—	—	—	b.	maintain run-on control system (725.372(b))
—	—	—	c.	maintain run-off control system (725.372(c))
—	—	—	d.	control wind dispersal of particulates

N/A SOI UNIT ONLY

14. Certification by qualified soil scientist in lieu of a registered Professional Engineer for closure of land treatment units (725.380(e))

— — —

N/A SOI UNIT ONLY

15. Closure of <u>incinerators</u> (T03)

—	—	—	a.	removal of all hazardous wastes and hazardous waste residues, including ash, scrubber waters and scrubber sludges
—	—	—	b.	management of residues as hazardous wastes unless determined to be nonhazardous according to 721.103(c) & (d)

N/A SOI UNIT ONLY

16. Closure of <u>thermal treatment units</u> (725.481)

—	—	—	a.	removal of hazardous waste and hazardous waste residues, including ash
—	—	—	b.	management of residues as hazardous waste unless determined to be nonhazardous according to 725.103(c) & (d)

N/A SOI UNIT ONLY

17. Closure of <u>chemical, physical and biological treatment units</u> (725.504)

—	—	—	a.	removal of all hazardous wastes and hazardous waste residues from treatment process or equipment, discharge control equipment and discharge confinement structures

PR AD NA

__ __ __ b. management of residues as a hazardous waste unless determined to be nonhazardous according to 721.103(c) & (d)

ALL DISPOSAL UNITS

18. Objective of closure and post-closure plans (725.410(b))

__ __ __ a. control of pollutant migration from facility via groundwater, surface water and air
__ __ __ b. control of ponding and surface water infiltration
__ __ __ c. erosion, run-on and run-off control

19. Considerations for achievement of closure objectives (725.410(c))

__ __ __ a. type and amount of hazardous wastes and Appendix H hazardous constituents which are contained in the waste
__ __ __ b. mobility and the expected rate of migration of pollutants
__ __ __ c. site location, topography and surrounding land use and the related potential effects of pollutant migration (proximity to groundwater, surface water and drinking water)
__ __ __ d. climate, including total amount, net amount, frequency and pH of rainfall
__ __ __ e. engineering characteristics of cover, including material, final surface contours, thickness, porosity, slope and length of run of slope
__ __ __ f. geological and soil profiles
__ __ __ g. surface and subsurface hydrology
__ __ __ h. soil balance analysis if on-site soils are to be used for cover and vegetative layer

20. Cover design (725.410(a))

__ __ __ a. grain size analysis and grain size requirements
__ __ __ b. soil classification -- USDA textural and Unified Soil Classification
__ __ __ c. compaction requirements -- should be 90-95% of ASTM D698 (Standard Proctor) density, compacted at a moisture content 3-5% above optimum moisture content
__ __ __ d. type of vegetation proposed
__ __ __ e. hydraulic conductivity
__ __ __ f. slope stability analysis
__ __ __ g. synthetic membrane specifications
__ __ __ h. depth of frost penetration and its effect on the cover system
__ __ __ i. erosion control
__ __ __ j. gas collection system
__ __ __ k. water balance analysis to estimate infiltration
__ __ __ l. settlement/subsidence effects considered

21. Construction procedures for cover (725.410(a))

N/A

PR	AD	NA		
SOI			a.	equipment requirements -- sheepsfoot roller, disk and water truck or other provisions for moisture control
UNIT			b.	lift thickness -- should be 8 inches (loose thickness) or less
ONLY			c.	construction QA/QC -- number of compaction tests, hydraulic conductivity tests, grain size tests, etc.
			d.	hydraulic conductivity testing conducted in accordance with IEPA guidance

N/A 22. Notice to local land authority (725.216 and 725.219)

SOI			a.	survey plat submitted to the Agency and to County Recorder with closure certification
UNIT			b.	note on plat which states owner's and operator's obligation to restrict disturbance of the site per 725.217(c)
ONLY			c.	record provided of type, location and quantity of hazardous waste disposed of within each cell or area of the facility, including wastes disposed prior to January 12, 1981 (725.219(a))

N/A 23. Notice in deed to property (725.219)

SOI			a.	recorded on deed or other instrument which will be examined during a title search that the land has been used to manage hazardous waste
UNIT ONLY			b.	copy of this instrument and a certification from the owner/operator that it has been properly recorded

24. Maintenance requirements -- activities and frequencies (725.217(a); 725.218(c); 725.410(d))

N/A

SOI			a.	integrity of final cover or containment structures
			b.	leachate collection, removal and treatment systems
UNIT			c.	groundwater monitoring system
			d.	gas collection and control system (if provided)
ONLY			e.	benchmarks
			f.	name, address and phone number for post-closure care contact person (725.218(c)(3))

N/A 25. Security

SOI			a.	restricted access, if necessary
UNIT			b.	security provided, if necessary (725.217(b))
ONLY				

N/A SEI UNIT ONLY

26. Groundwater monitoring (725.217(a)(1); 725.218(a)(1); 725.191 to 725.193)

PR	AD	NA		
__	__	__	a.	description of groundwater monitoring system, activities and frequencies for post-closure period (725.191; 725.218(a)(1))
__	__	__	b.	sampling and analysis plan (725.192)
__	__	__	c.	outline of groundwater quality assessment program (725.193)

ALL FACILITIES

27. Closure performance standard (725.211)

Y	Y	__	a. minimizes further maintenance
Y	Y	__	b. protects human health and environment
Y	Y	__	c. addresses all hazardous constituents (Part 721, Appendix H)

28. Training requirements for cleanup activities

__	__	__	a. provisions made to ensure that site workers will receive training in accordance with 29 CFR, Part 1910

29. Part A Status

DON'T HAVE

__	__	__	a. Part A and HWDMS reviewed
__	__	__	b. discrepancies between units and design capacities in Part A, HWDMS and closure plan resolved
__	__	__	c. for complete closure -- all units closed or withdrawn
__	__	__	d. revised Part A or withdrawal request to be submitted with closure certification

HAVE YET TO SEE SWMU CERT.

30. SWMU status

__	__	__	a. initial screening completed
__	__	__	b. initial screening previously submitted _____
__	__	__	c. environmentally significant information found during file search
__	__	__	d. Certification of Continuing Releases received from facility
__	__	__	e. units identified by facility consistent with those found during file search
__	__	__	f. releases indicated on certification
__	__	__	g. releases to be cleaned up under closure
__	__	__	h. releases to be referred to US EPA for action
__	__	__	i. SWMU's not previously identified discovered during closure?

STATE OF ILLINOIS
ENVIRONMENTAL PROTECTION AGENCY

IL 532-0357
ADM 39
054-002

Subject DUPO, ILLINOIS RAIL YARD

Data

Reviewed by WILLIAM J SINNOTT II Date 4/27/93

SECTION B: CLOSURE PLAN CHECKLIST

1. DESCRIPTION of HAZARDOUS WASTE OPERATION & PROPOSED CLOSURE

Y) Y) a) ON PAGE 1 THERE IS A DESCRIPTION PROVIDED of HAZARDOUS WASTE OPERATIONS

Y) Y) b) ON PAGE 1 THERE IS A DESCRIPTION PROVIDED for ALL HAZARDOUS WASTE UNITS AT THE FACILITY

Y) Y) c) ON PAGE 1 THEY IDENIFY THE UNITS CLOSING

Y) Y) d) THEY SAY THEY WILL NOT TREAT, STORE OR DISPOSE of ANY HAZARDOUS WASTE

Y) Y) e) THE MAXIMUM INVENTORY of WASTES IS 114 DRUMS of F027 WASTE

Y) Y) f) THEY GO INTO GREAT DETAIL ABOUT HOW THEY ARE GOING TO PERFORM DECONTAMINATION

~~N) N~~ Y) Y) P4. g) - h) ~~THERE IS NO SCHEDULE of CLOSURE PROVIDED; HOWEVER WE WILL TELL THEM WHEN TO CLOSE~~

Y) Y) j) THEY IDENTIFIED THE WASTE AS F027 WHICH IS CORRECT

N) N) K) THE GROUNDWATER/SURFACE WATER USE IN THE AREA NOT IDENTIFIED; HOWEVER THIS IS NOT A MAJOR ISSUE

2. PUBLIC INVOLVEMENT

N) N) I HAVE YET TO SEE A PUBLIC NOTICE POSTING

STATE OF ILLINOIS
ENVIRONMENTAL PROTECTION AGENCY

IL 532-0357
ADM 39
054-002

Subject DUPO, ILLINOIS RAIL YARD (PRESENT)

Data

Reviewed by WILLIAM T SINNOTT II Date 9/27/93

3. CLOSURE TIME LIMITS

N) N) a) THEY DO NOT MENTION THE 90 DAY LIMIT HOWEVER, WE WILL PUT THIS IN CLOSURE PLAN APPROVAL LETTER

Y) Y) b) ON PAGE 4 THEY MENTION THE 180 DAY LIMIT

4. DISPOSAL OR DECONTAMINATION OF EQUIPMENT

Y) Y a-e) COVERED ON PAGES 4-6. AND 7.

5. CERTIFICATION OF CLOSURE

N) N a) WE WILL PUT THIS IN CLOSURE ~~PLAN~~ PLAN APPROVAL LETTER

Y) Y) b) P7

Y Y) c) P8

7. CLOSURE OF CONTAINER STORAGE AREA

N/A) a-e) THEY DON'T PROPOSE SOIL SAMPLING NOR DO I BELIEVE THEY NEED TO DO ANY

f-h) PP 4-7

Y) Y) i-k) FIGURE 5